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ABSTRACT

The reduction of traditional medical curricula from four to three years by many medical schools in the U.S. since approximately 1969--a major experiment in medical education--was studied. The effects on the institutions and medical programs were examined by analyzing the information regarding: (1) the school's decision to convert to a three-year program, (2) the process by which such programs were adopted and conducted, (3) the attitudes toward the program by the school administration, department chairman, faculty, and students, (4) graduate appraisals, (5) the curricular characteristics, and (6) the comparative nature of financial, admissions, student, and related institution variables with those of selected schools conducting four-year programs. Study schools were classified on the basis of their provision of a required or optional program. Further distinction was made for old schools and new schools. A total of 18 institutions participated in the project. Data were derived primarily from: the study schools, the Institutional Profile System (IPS) maintained by the Association of American Medical Colleges, the survey instrument developed for the study, and the institutional site visits to 16 schools. It was found that the major impetus for change to a three-year program came from the deans or the administrative staff and major opposition came from the medical basic science department chairman. Included are the questionnaire, questionnaire responses, and several tables and charts. (LC)

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Association of American Medical Colleges

A STUDY
OF THREE-YEAR CURRICULA IN U.S. MEDICAL SCHOOLS

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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HE 011 757

Division of Educational Measurement and Research

A STUDY
OF THREE-YEAR CURRICULA IN
U.S. MEDICAL SCHOOLS

by

Robert L. Beran, Ph.D. and Richard E. Kriner, Ph.D.

August 1978

This study was conducted by the Association of American Medical Colleges under contract with the Division of Medicine, Bureau of Health Manpower, Health Resources Administration, Department of Health, Education, and Welfare (Contract No. 231-75-0603). The opinions, conclusions, and recommendations contained herein do not necessarily represent those of the supporting agency.

ACKNOWLEDGEMENT

The provision of data, descriptive information, and guidance which formed the basis of this report was facilitated by the efforts of many individuals. One of the primary goals of this study was to accurately and realistically describe the many facets of educational program operation in a selected population of schools of medicine. To this end, the cooperation and effort of the representative at each study school was indispensable to the completion of this study. The authors are deeply indebted to these individuals for the numerous tasks they performed and the guidance they provided during the tenure of the study. We also express our sincere thanks to the faculty and students who completed the questionnaire and thus, provided the data base for a sizeable portion of the study.

Consultation throughout the study was provided by the project technical advisory committee. The committee was composed of Drs. Robert Barbee, Sam Clark, Thomas Devlin, Marvin Dunn, James Griesen, and Frank Stritter. We are particularly grateful to this group of individuals for their counsel and direction throughout the duration of the study.

Appreciation is also extended to Mr. Joseph Brown, the Bureau of Health Manpower assistant director, for his efforts in assisting with the progress of the study and his advice and cooperation during the tenure of the project. We also express our thanks to Drs. James Erdmann and Xenia Tonesk, and Robert Jones for their review of the draft of the report.

Of particular significance to the daily operation of this study, the coordination of information with study schools and the performance of a multitude of other tasks associated with the preparation and typing of materials, was the untiring effort of Ms. Rebecca Meadows. Her dedication to the project was of invaluable assistance to the authors of this report.

FOREWORD

The reduction of traditional medical curricula from four to three years by a number of medical schools in the United States beginning approximately in 1969 represented a major experiment in medical education and the Bureau of Health Manpower initiated a contract study to document this experience. The study attempted to determine whether original expectations for the shortened programs had been realized and whether these programs had any significant impact which had not been anticipated.

The Federal Government provided financial incentives for shortened programs in fiscal years 1969 through 1976. Even before this time a number of three-year programs began to convert to four.

Data was collected from nearly all medical schools with a significant proportion of enrollment in three-year curricula. Questionnaires, extensive interviews, and a considerable body of existing institutional profile data were used in the analysis, The investigators were Drs. Robert L. Beran and Richard E. Kriner, both of the Association of American Medical Colleges. Dr. Kriner's experience is in social research and Dr. Beran is a former medical school faculty member and was a principal participant in the development of the independent study curriculum at Ohio State University College of Medicine.

Determining the effects of even portions of educational programs is a difficult task, and it was recognized from the outset that a study as complex as this one would face many limitations. Nonetheless, the authors have recorded information and observations which should be of use to educational and government policymakers, and of interest to anyone involved with medical education.

Joseph Millard Brown
Assistant Director
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Health Resources Administration
August, 1978

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EXECUTIVE SUMMARY

The present study of three-year undergraduate medical education programs is intended to be an in-depth examination of those programs in U.S. medical schools which, between 1970 and 1976, conducted an undergraduate medical education program which led to the awarding of the M.D. degree within 34 to 36 months of matriculation. In certain instances, comparisons are made with the traditional four-year program where 46 to 48 months is required from matriculation to graduation.

The purpose of the study is to describe the effects exerted on the institutions and the medical education process through the operation of three-year undergraduate medical education programs by analyzing information regarding: (1) the school's decision to conduct the program, (2) the process by which such programs were adopted and conducted, (3) the attitudes and perceptions of the program by the school administration, department chairmen, faculty, and students, (4) the appraisal of graduates of these programs, (5) the curricular characteristics of the program, and (6) the comparative nature of financial, admissions, student, and related institution variables with those of selected schools conducting four-year programs. A clear distinction is made in this study between an educational program and a curriculum. The conversion from a four-year to a three-year program did not necessarily imply a curriculum change, revision, or conversion.

Study schools were classified on the basis of their provision of a required or optional program. Further distinction was made for old and new medical schools. Schools included in the category of new schools were those in which the charter class of students was admitted between 1969 and 1975. As an indication of program stability and to discern individualized tracks from organized programs, at least 10% of a single class enrollment must have chosen the three-year program in order to be included in the study as an optional school. Six-year undergraduate medical education programs are not included in this study. A total of 18 institutions participated in the project with six schools in each of the following categories:

Old schools - schools of medicine that had conducted four-year undergraduate medical education programs prior to their adoption of the three-year program. In these institutions, a complete conversion was undertaken and the three-year program was essentially a required program for all students. No other options were available for a student making normal academic progress.

New schools - schools of medicine that accepted their charter class of students in 1969 or later and initiated the undergraduate medical education program in the three-year format. In these institutions, the three-year program was essentially a required program and no other options were available for a student making normal academic progress.

Optional schools - schools of medicine whose major program was the four-year program, but a structured program option existed for students to elect to graduate within 34 to 36 months of matriculation. For inclusion in this category, at least 10% of a specific class must have chosen the option.

Data was derived principally from four sources: the study schools, the Institutional Profile System (IPS) maintained by the Association of American Medical Colleges, the survey instrument developed for the study, and institutional site visits to 16 schools by the project staff. The primary source of descriptive data was the survey questionnaire which gathered information concerning the decision-making process of the conversion to or adoption of the program, the operation of such programs, and the opinions and attitudes generated by the faculty and students as a result of participation in the programs.

Study school respondents were chosen from: medical school administrative staffs, basic and clinical science department chairmen, basic and clinical science junior and senior faculty, housestaff, and students. The nine categories of study school respondents completed various sections of the questionnaire that addressed numerous issues related to the educational program and general institutional operation. A survey of graduate medical education program directors and deans of four-year program schools was also undertaken. Curriculum schedules, student progress information, and student course elective patterns were also examined for each of the study schools.

Study school questionnaire results were analyzed by: (1) institution, (2) respondent category, and (3) basic and clinical science disciplines. An analysis of the response from study schools that undertook a substantial curriculum revision concurrent with the conversion to a three-year program was also accomplished. The results are presented with the institution serving as the unit of response. Responses of individuals at a single institution were examined and the single response which best represented the institution was determined for each item. The significant results of respondent category and discipline analyses are presented throughout the report.

For institutions that previously conducted four-year programs, the conversion to the three-year program was minimally related to their dissatisfaction with the four-year program. If dissatisfaction was expressed about the four-year program, it was concerned with curriculum methodology and not program length. The major impetus for consideration and eventual initiation of three-year programs emerged from the deans or administrative staffs within the schools of medicine. Respondents stated, nearly unanimously, that the stimulus to consider three-year program initiation was provided by the financial incentives contained in the 1971 Health Manpower Legislation. In the survey of deans of four-year schools, these same incentives were also given as the most frequent response if they had considered the conversion to a three-year program.

The primary goal in encouraging and conducting the three-year program was, in the vast majority of schools, based on the institution's objective to acquire additional funding through this action. In over one-half of the study schools, substantial pressure was exerted directly or indirectly by state government to seek this avenue for additional funding. Several deans indicated the conversion to the three-year program was as much a political decision as a financial one. The major source of the additional institutional funds associated with program shortening was not from three-year program graduate bonus allocations provided by the HPEA Act of 1971. The examination of the special projects awards in the program shortening category for institutions involved in this study reveals these institutions accounting for at least one-half of all awards from 1972 to 1974 (1972 - 63%, 1973 - 53%, 1974 - 54%).

The principal source of opposition for three-year programs emulated from the medical basic science department chairmen. Several factors which influenced the opposition are: the reduction of medical basic science student contact hours in the curriculum, the threat of losing influence in the curriculum and conflicts with teaching responsibilities in other health professions curricula. The opposition from clinical faculty was chiefly in the area of the subjective judgment of the student's level of preparedness for graduate medical education.

The decision-making process differed in new schools. The site visits revealed a much higher comfort level in the faculty of these institutions. The feeling of participation in the decision-making process and the unique opportunity to be a part of the new school was evident during meetings with the faculty. During the developmental phase of the institution, the faculty were devoting large portions of their time to undergraduate medical education affairs. The dynamics of the development of these programs carried over into their operation. Thus, it should not be surprising that, of the seven schools still operating required three-year programs, four were classified as new schools in this study. It is interesting to note that as the faculties of new institutions enlarged and departments became more secure, increased sentiment to convert to a four-year program was observed.

The changes which occurred in the required curriculum on the conversion from a four-year to a three-year program were limited almost

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exclusively to the preclinical sciences. An investigation of the hours for each discipline prior to the conversion and at least one year following the first year's operation of a three-year program was conducted for old schools. The hourly contributions of each discipline and available student free time were tabulated and comparisons were made between similar calendar years. There was an average total reduction of 700 hours of formal discipline instruction within six basic science disciplines in the three-year program. The disciplines which traditionally occupy the first year of instruction experienced the highest percentage of reduction in hours.

Although content reduction occurred, the change in the educational program was more in its distribution of discipline hours and its calendar year timing. The vast majority of faculty expressed the concern that the three-year program had resulted in a compression of subject matter in the medical basic science disciplines. In general, the preclinical science time in the curriculum was changed from 18 months of instruction in a 24 month period to between 15 and 18 months of instruction in a 16 to 19 month period. In most institutions, little or no break was provided between the traditional first year and second year disciplines. The length of clinical experience remained virtually the same before and after the conversion averaging 18 to 20 months of instruction over an 18 to 21 month period.

The average student free time during the instructional week within the study schools did not significantly change. In fact, in several institutions, weekly student free time slightly increased. Thus, the significant degree of "stress" in the basic science portion of the curriculum indicated by the faculty and students was a product of the density of the curriculum over an extended period of time.

In old schools, the introduction of three-year programs greatly inhibited curriculum flexibility. Attrition from courses and disciplines approached 10% in some study schools and students encountered increased difficulty in remedying course or unit deficiencies. Because of the scheduling of the academic year, additional conditions were evident in the clinical sciences concerning the timing of career choice of the student. Faculty and students felt that students were forced to make career choices early in their clerkship training which also had the effect of minimizing the "exploration" of clinical science areas through electives.

The conversion to and operation of three-year programs required more educational program committee work for faculty. Faculty stated a decrease in the availability of dedicated blocks of research time and activities associated with their personal research programs. This appeared to be a result of the interruption of laboratory time by additional committee responsibilities in the educational program more than a direct result of the operation of a three-year program. Clinical faculty indicated no affect on the quality of patient care as a result of the institution's conduct of a three-year program. Faculty noted some decrease in their personal free time and vacation time. The faculty of new schools attributed a noticeable increase in their use of instructional objectives as a result of their participation in a three-year program.

The impact of three-year programs upon institutional operation variables (e.g., revenues and expenditures for research, sponsored teaching/training, tuition/fees, and student enrollment) was examined. The general indications were that rates of change over the study period (1969-70 to 1975-76) were similar for the study schools and a group of comparable control (four-year) schools. There were some differences in the general financial character of the study and control schools. Revenues for sponsored research in control schools increased at a somewhat faster rate for study schools than for control schools up to the period 1973-74 when a noticeable decline in these revenues for study schools occurred.

Total medical student enrollment for both groups of schools increased at the same rate up to 1974-75 when study schools showed a decline. Likewise, faculty numbers in both groups of schools were comparable with some fluctuation in study schools which was attributable primarily to two or three study schools which fluctuated greatly in a two year period. Generally, the trends over time were similar for both study and control schools on most financial indicators. The differences appeared more due to the general financial character of the study schools as they responded to changing federal emphasis on aspects related to accelerated programs and increasing the national health manpower pool.

Except for two institutions, total student tuition was the same for the four-year and the three-year program. The savings to a student enrolled in a three-year program compared to a four-year program student is in living expenses. If a student established residence in the municipality in which the medical school was located, i.e., married students, he/she encountered nine months of additional living expenses. This study did not consider the loss of foregone earnings as a savings in educational costs. The entry into graduate medical education one year earlier benefited the student's cash flow, but was not considered associated with the principle of reducing the cost of undergraduate medical education.

The results of the present study agree with previous studies demonstrating that the results of internal examinations did not reveal any measurable differences in three-year program students when compared with the performance of four-year program students. The performance on the National Boards, except in some cases at the year of program transition, were comparable. In fact, in several institutions, performance in some disciplines improved.

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The subjective evaluation of graduate medical education program directors reveals that generally they are not as satisfied with three-year program graduates as they are with those students graduating from four-year programs. Responses from program directors clearly demonstrated a bias in the PGY-1 selection process. They felt that three-year program graduates are not as mature and do not have as much in-depth knowledge as four-year program students. Most responses were a result of the program directors' concern about the lesser ability of these students to assume responsibility upon entrance to their first year of residency. Although the existing bias does not appear to have a measurable objective base, the important fact remains that the bias is present.

The effect of the introduction of three-year programs in U.S. schools of medicine on the national health manpower pool can be viewed from two perspectives; the increase in the total size of the pool and the rapidity at which the pool is enlarged. The increase in the total number of graduating M.D.s due to the starting of a three-year program will occur only once. The one time increase will occur when the first three-year program class in each institution graduates simultaneously with the last four-year program class. The potential one time increase was examined by calculating the total number enrolled in the first three-year program class as defined in this study.

The total first class enrollment in institutions converting to or initiating three-year programs was 2,438 students. Of these 2,438 students, 325 were enrolled in the charter class of new institutions. Thus, in one respect, the three-year program effort in this country resulted in the potential graduation of 2,438 additional physicians than would have normally occurred if all institutions had remained on a four-year program. Beyond the initial 2,438 "extra" students from first classes, further implications for the health manpower pool resulting from the conduct of three-year programs reside in issues concerned with time of entry to graduate medical education.

The result, or conversion in the case of new schools, to the four-year program has further implications for the size of the national health manpower pool. It is clear that the conversion to four-year programs by institutions formerly conducting three-year programs lessened the significance of the one time increase. Several schools, because of the conversion to a four-year program, will experience a year without graduates.

A maximum of 23% of the nation's schools of medicine initiated a three-year program. At the time of the publication of this report, only 8% have continued a three-year program with at least 10% class enrollment. Of this group, four schools have indicated they will definitely return to, or will have begun to phase in, the four-year program within the next calendar year. The movement of schools to initiate the three-year undergraduate medical education program was in the absence of supportive objective data or documented experience. The return to the four-year program by a substantial percentage of institutions that had converted to the three-year program also occurred with virtually no differences in objective assessment between three-year and four-year program students.

The results of this study support other studies which indicate that one of the causes for the demise of the three-year program was faculty opposition. Secondly, the financial incentives for three-year programs disappeared and since this corresponded to the expressed goals of introducing the program, the programs were eliminated. Thirdly, the opinions of clinical program directors had considerable influence on institutions considering the return to a four-year program. This concern was more indirect than direct on the institution.

The results of this study also revealed considerably more agreement with the concept of shortening the period between high school graduation and the awarding of the M.D. degree than with three-year programs as described in this report. Faculty and administrators expressed concern with shortening one phase of the continuum in the absence of examining the implications on the student's total educational program. In this regard, it is noteworthy to mention that programs which provide for the awarding of the M.D. degree within six years of high school graduation have experienced a longer tenure in U.S. medical schools than the three-year programs described in this study.

INTRODUCTION

The purpose of this study is to describe the effects exerted on institutions and the medical education process by the operation of three-year undergraduate medical education programs in U.S. medical schools. Where possible, comparisons with four-year programs are made regarding educational program operation, curriculum characteristics, student characteristics, and faculty attitudes. For the purposes of this study, a three-year program is defined as one which provides for the completion of studies and awarding of the M.D. degree within 36 months of matriculation. Study schools were classified on the basis of their provision of a required or optional program. Further distinction was made for old and new medical schools. Schools included in the category of new schools were those in which the first class of students was admitted between 1969 and 1975. As an indication of program stability and to discern individualized tracks from organized programs, at least 10% of a single class enrollment must have opted for the three-year program in order to be included in the study as an optional school. Six-year undergraduate medical education programs were not included in this study. Although six year programs are, in some cases, composed of three years of undergraduate college coursework and three years of medical studies, their administrative organization and programmatic objectives are sufficiently unique to warrant their exclusion. The period examined in the study was from 1970-1976.

BACKGROUND

The first appearance of three-year undergraduate medical education programs occurred during World War II. The V12 and Armed Services Training Program (ASTP) were originated to respond to a national emergency. Medical schools in the U.S. compressed the medical school experience from the traditional four years to three years and, in some cases, less, to train physicians more rapidly for the military. At the end of the war, schools returned to the four-year format. A search of the literature in the early stages of this study failed to reveal any evaluation or documentation of this significant experience. During the site visits conducted as part of the present study, project staff had the opportunity to talk with a number of present medical school faculty who were graduates from one of these programs. Some anecdotal comments regarding these World War II programs appear later in this report. Between the termination of the World War II programs and the late 1960's, very few formal three-year programs with substantial student enrollment existed.

The almost complete absence of formal three-year programs in the nation's medical schools is not intended to imply that all students graduated in four years. A substantial number of medical schools have historically permitted special students to graduate early. Usually, such students possessed extraordinary academic qualifications and special programs were designed for their benefit. Even though individualized study tracks for the exceptional students have been characteristic of medical education, the total number of students graduating in three years was miniscule. The concept of individualized study programs is important to recognize when examining institutional responses to questions about three-year optional programs. For example, in 1972, 24 schools indicated that their educational program provided an option for students to graduate in three years (1). The examination of enrollment data showed nearly half of these institutions with no students taking advantage of the option. Thus, care should be exercised in drawing inferences from data concerning optional programs.

As a result of the Health Manpower Training Act of 1968, separate funding was allowed for special project grants. Priority was given in awarding grants to projects that would increase enrollment, ease financial distress, improve the curriculum, or reduce the period of training. This appears to be the first legislative mention by the federal government on the subject of shortening programs. Table 1 depicts the patterns of special project awards granted from 1969 through 1975 for the purpose of shortening the period of training. Funding in this category included six year and other combined undergraduate college - medical school programs. To some extent, awards given in other areas within the special projects category facilitated institutional efforts to shorten programs, e.g., enrollment increases, interdisciplinary training, team teaching approach, and curriculum improvement.

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Table 1*

Special Project Grants for Shortening the Period of Training to U.S. Schools of Medicine - 1970-1975

Year	Total Dollars Awarded
1969	$ 335,225
1970	610,500
1971	1,368,160
1972	3,829,502
1973	3,326,891
1974	3,003,528
1975	1,522,521

*Provided by Bureau of Health Manpower, Health Resources Administration

In 1970, the Carnegie Commission recommended the shortening of the total duration of time required in undergraduate (premedical) and medical education (2). Among the ways suggested was the development of the three-year undergraduate medical education program to accelerate the period of M.D. candidate education. Other recommendations were: (1) provisions for advanced standing for students entering with extensive premedical preparation, (2) providing instruction for M.D. candidates during all or part of the summer, (3) reducing the total number of years required for premedical and medical education combined, and (4) eliminating the free standing internship year, a step that had already been approved by the American Medical Association in June 1970 and which became fully effective for the first time in 1974-75 (2, pp. 47, 48). Physician shortage and increasing costs of medical education were among the reasons cited for these recommendations.

The Comprehensive Health Manpower Training Act of 1971 constituted the major thrust of the federal government to encourage schools of medicine to initiate three-year undergraduate medical education programs. The federal capitation program, if schools met eligibility requirements, provided a basic award with bonuses available for increases in institutional enrollment and for shortening the medical education program. Pertinent to this study was the provision for a $6,000 award for each student graduating in three years whereas only $4,000 per student was awarded for graduates of programs requiring more than three years to obtain the M.D. degree. The principle of formula awards was utilized for program shortening incentives and enrollment increases. Table 2 displays the percent awarded in relation to available appropriations.

In a survey conducted in 1970, 19 medical schools indicated they had started or were planning to start a three-year program. An additional 14 schools declared they were considering such a program (3). In 1970, enrollment data obtained from institutional capitation applications showed 671 first year, 76 second year, and 41 third year students enrolled in three-year programs. Seventy seven percent (532) of the enrollment of first year students in three-year programs in 1970 occurred in three institutions. In 1970, five U.S. medical schools conducted required three-year programs, i.e., programs in which all students making regular rates of academic progress were to graduate in three years, and four schools had students enrolled in optional three-year programs. The schools in the optional program category had regular four-year programs, but provided a separate track of study in three years and had at least 10% of a class in those programs.

Table 2*

Health Professions Capitation Awards
Fiscal Years 1971-74

Year	% of Formula	Appropriations	Total Medical Students	Dollars Per Medical Students**
1971	***	$ 21,823,763	43,650	499
1972	69.4	90,190,672	47,546	1,896
1973	64.5	95,884,646	50,217	1,909
1974	63.9	105,603,745	54,074	1,952
1975	47.0	85,817,703	56,244	1,525
1976	30.1	57,510,548	58,266	987

*Provided by Bureau of Health Manpower, Health Resources Administration

**Capitation award based on percent of formula used for year and degree of institution's compliance with the following incentives: six or three year medical school graduates, medical student enrollment increases and physician assistant enrollment.

***Distribution Formula used in FY'71 computed differently than in subsequent years

Three years later, in 1973, the number of U.S. schools of medicine with required three-year programs had increased to 19. Among those 19 schools were seven institutions which had accepted their first class of students in 1969 or later and initiated their educational program in the three-year format. Also in 1973, seven schools of medicine offered an optional three-year program in which at least 10% of the class had elected the option. The optional schools are essentially four-year program institutions with an organized accelerated track. During the early 1970's, several institutions had initiated required three-year programs and by 1973, had either converted to a four-year program or changed to a four-year program with a three-year option. Thus, between 1970 and 1975, the total numbers of required and optional three-year programs fluctuated from one year to the next.

Since one of the primary objectives of this study was to describe the effect of three-year program operation on the institution, it is important that the complexity of influences affecting the institution be considered. The period of 1970 to 1975 represents an extremely unsettled period for the nation's schools of medicine. In their attempts to respond to both national and local influences, institutions found themselves changing, innovating, and enlarging during a period when financial support was decreasing. Schools of medicine were being requested to: (1) respond to the shortage of physicians by increasing class size, (2) increase the emphasis of primary care in the curriculum, (3) provide more clinical relevance in the curriculum through the provision of early student exposure to patients, (4) increase interdisciplinary teaching efforts, and (5) accelerate the period of training. These and other factors ultimately affected the institution's educational program. Undergraduate medical education programs were being pulled in several directions in attempts to meet these needs.

It is within this changing period that the present study was focused. Since the responsibilities of the institution and its faculty include education, research, and public service, the study of an educational program must be made within the context of total institutional operation. The changes in one phase of institutional operation are frequently felt in the execution of other institutional responsibilities. Additionally, in the milieu of these responsibilities, determination of cause and effect of a single program is often impossible. The activities of the faculty are often inseparable, e.g., education and patient care, and thus, the genesis of events and/or attitudes is often not always clear. The "rippling effect" of institutional decisions on other responsibilities and the complexity of the medical education process are important phenomena to keep in mind as one examines the results of this study. The study reinforced the notion that when attitudes and perceptions are surveyed, the responses often reflect multiple causes for present opinions.

A clear distinction is made in this study between an educational program and a curriculum. The conversion from a four-year to a three-year program does not necessarily imply a curriculum change or conversion. In fact, it will become apparent that in several of the programs studied, only the time was altered with little or no change in the competencies (content and skills) which the students were expected to acquire.

Several significantly unusual features in the study warrant a brief explanation. The contract to conduct the study began in February of 1975. The most intense three-year program activity in U.S. medical schools occurred in 1973. Institutions were beginning to initiate considerations to return to four-year programs in 1974 and some schools had already begun to establish procedures to reintroduce the four-year program. The primary data collection instrument, the questionnaire, was designed to gather attitudes and opinions from a broad spectrum of medical school personnel. In many instances, faculty and students were asked to provide a retrospective response. Respondents were requested to recall their attitudes about a situation two to four years in the past. Also, their attitudes were most certainly colored by events occurring in the intervening time. It is our contention however, that the quality of an educational program rests, in large part, with the attitudes and commitment of the program participants. Attitudes, opinions, and most importantly, tradition pervade the decision-making process in educational programs. It was judged appropriate to document the process in order to understand the impact of the program. In spite of the pitfalls inherent in the total accuracy of an individual's recall of events and circumstances, numerous trends emerged from the collected information. The significant outcomes of the study are in the areas of institutional governance, the process of program change, and the impact on institutional personnel resulting from program change. It is very clear that the process of

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change produces residual attitudes and the "quality" of these attitudes has considerable effect on the permanency and nature of the product of change.

The problem of elapsed time between events and the completion of the questionnaire was further compounded by an extensive delay in the process of clearance of the study questionnaire required by the Office of Management and Budget. Fourteen months were consumed by the clearance process. The delay produced innumerable problems with the selection of respondents and severely affected the student and faculty response rate. Within the period of time lost by questionnaire processing, the last class of three-year program students in several institutions had graduated. Additionally, in institutions with three-year program students, questionnaires were ultimately mailed to students near final exam periods and dates of graduation. However, in spite of these problems, the response rate from faculty and students provided a reasonably accurate profile of the institutional program and its faculty.

The comparison of the academic performance of three-year and four-year program students was not a priority in this study. Since the nature of measures of student performance changes from year to year within a particular institution, the application of statistical techniques for comparisons would have been without reference points. Even within institutions providing both a four and three-year program, evaluation instruments differed between programs. Performance of Parts I and II of the National Boards is briefly treated, but extreme caution must be exercised in making group comparisons. Performance on the National Boards, particularly Part I, is highly dependent upon school requirements. If Part I is required for all students but scores are not recorded, performance levels differ from those where a requirement and use of scores for promotion decisions exists. Furthermore, the type of use of scores for promotion decisions has its effect on student performance levels. The acceptance of an overall pass produces different student incentives than the requirement for a pass on all or several of the seven disciplines. Additionally, in a substantial percentage of the study schools, the "rules" for taking Parts I and II changed during the period studied.

One final word on comparisons. Those who have participated in the development and operation of innovative programs are familiar with the problems of trying to evaluate the innovative experience. For every facet of the innovation which departs from tradition, a comparable model does not exist. Innovators are constantly implored to compare the innovation with the traditional program, when indeed, more differences exist than similarities. Furthermore, in many instances, a program evaluation model is not present for even the traditional mode of activity, not to mention the innovative. The authors do not believe the three- year program constitutes an educational innovation. The methodologies and practices employed in these programs may indeed be innovative, but the three-year program itself represents a time period. Nevertheless, the comparison of the three-year program with a four-year program encounters difficulties similar to those referred to for innovative programs. During the site visits of this study, the project staff were constantly asked, "Is someone doing an evaluation of the four-year program?". It is apparent that institutional efforts in total program evaluation have been spotty. If there is one clear message that emerges from this study, it is the need for a concentrated effort to develop realistic models for educational program evaluation. Although decisions on program and student quality will always involve subjectivity, changes in educational programs should be undertaken with more empirical data than are presently utilized.

METHODOLOGY

The present study of three-year undergraduate medical education programs is designed to be an in-depth examination of these programs in schools which, between 1970 and 1976, conducted an undergraduate medical education program which led to the awarding of the M.D. degree in 34 to 36 consecutive months. In certain instances, comparisons are made with the traditional four-year program where 46 to 48 months is required from matriculation to graduation. The purpose of the study of three-year programs is to provide information regarding: (1) the school's decision to conduct the program, (2) the process by which such programs were adopted and conducted, (3) the attitudes and perceptions of the program by the school administration, department chairmen, faculty and students, (4) the appraisal of graduates of these programs, (5) the curricular characteristics of the program, and (6) the comparative nature of financial, admissions, student and related institutional variables with those of selected schools conducting four-year programs.

The selection of schools of medicine eligible for participation in the study was based on enrollment data derived from institutional capitation applications for the years 1968-1975. All institutions indicating a three-year program with 10% or more of any class enrolled in the program for at least two consecutive years were sent an invitation to participate in the project. Those schools that consented to participate were classified as old, new, or optional schools according to the criteria noted below. An individual at the participating institution was designated by the dean of the institution to serve as the institutional contact for the study. All remaining communications, requests, and information verification were directed to this contact person. The information supplied by the institutional representative made it possible for the project staff to assess the appropriateness of inclusion of the institution within the scope of the study and to verify the type of program in operation at each school. For example, two institutions that conducted three-year programs selected two entering classes each year. These programs were considered sufficiently different in operation and in the nature of the administration of the programs to be held aside from the other schools in the study. In addition, four schools were undergoing significant administration change and declined to participate for that reason. An additional three schools preferred not to participate and thus, were not included in the study. As a result, a total of 18 institutions participated in the study with six schools in each of the three categories (old, new, and optional).

CLASSIFICATION OF SCHOOLS

In order to fulfill the purposes of the study and accurately to reflect the similarities and differences of the various types of three-year programs, the study schools were classified as follows:

Old Schools - schools of medicine that had conducted four-year undergraduate medical education programs prior to their adoption of the three-year program. In these institutions, a complete conversion was undertaken and the three-year program was a required program essentially for all students. No other options were available for a student making normal academic progress.

New Schools - schools of medicine that accepted their charter class of students in 1969 or later and initiated the undergraduate medical education program in the three-year format. In these institutions, the three-year program was a required program and essentially no other options were available for a student making normal academic progress.

Optional Schools - schools of medicine whose major program was the four-year program, but a structured program option existed for students to elect to graduate within 34 to 36 months of matriculation. For inclusion in this category, at least 10% of a specific class must have chosen the option.

DATA SOURCES

Data was derived principally from four sources: the study schools, the Institutional Profile System (IPS) maintained by the Association of American Medical Colleges (AAMC), the survey instrument developed for the study, and institutional site visits by the project staff. Additional information was provided by the Bureau of Health Manpower, Health Resources Administration, the AAMC Curriculum Directory, and the AAMC Medical School Admission Requirements handbook. Appendices A and B provide cross references for study objectives and the data sources used to meet these objectives.

STUDY SCHOOL DATA

Information concerning the educational program and curriculum, student characteristics and their rates of academic progress, and local environmental factors were supplied by each of the study schools. This information was provided for specific academic years designated by the project staff. The determination of the effect on the undergraduate medical education curriculum resulting from the initiation or conversion to a three-year program was facilitated by the examination of curriculum schedules from each of the study schools. Institutions which had conducted a four-year program prior to their experience with the three-year program submitted curriculum schedules for two representative years of both four- and three-year program operation. Schools were requested to avoid the submission of schedules for the years of actual conversion as well as one year before or after the program change. The schedules consisted of daily summaries which permitted an analysis of discipline input to the curriculum and unscheduled class time. The characteristics and discipline contribution to the three-year program were also examined in schools comprising the new and optional school categories. In the old schools, the analysis of an institution's curriculum schedules focused primary attention on how the content and density of the curriculum differed between the four- and three-year programs. Consideration was directed to whether, upon conversion, the former four-year program was condensed, thus requiring less subject matter for which students were held responsible, or compressed and requiring essentially the same amount of content over a shorter period of time. Concurrent changes in curriculum organization and trends in curriculum change when coupled with program shortening were also observed.

INSTITUTIONAL PROFILE SYSTEM

The Institutional Profile System (IPS) is a data base containing information on faculty, enrollment, finance and other institutional variables from each member school of the AAMC. The major source of data for IPS is the annual questionnaire of the Liaison Committee on Medical Education. Of specific importance to this study was Part II of the questionnaire pertaining to curriculum, student enrollment, student characteristics, and faculty. This information was accessed for the study schools and any institutions used in four-year program comparisons. Data was available from IPS on all years included in this project.

INSTITUTIONAL SITE VISITS

The descriptive nature of this study necessitated an accurate assessment of the environment at each of the study schools during the periods of program change and operation. The proper interpretation of the questionnaire response patterns, particularly in the areas of attitudes and perceptions, was dependent upon knowledge of the existing local and institutional variables during these periods. Factors such as the institutional setting at the time of undertaking considerations to adopt the three-year program, the mechanism by which the change occurred, the local and institutional "politics" affecting the program transition, and the decision-making process in curricular matters have considerable bearing on the nature of faculty responses. The derivation of this type of information solely through the use of a survey instrument is incomplete; hence, site visits were incorporated into the study design.

The project staff spent from one to one and a half days at 16 of the study schools. The purpose of these visits was to clarify and elaborate the various group responses for the visited school. The visits were planned to allow sufficient time for the project staff to gain initial impressions of the institution from questionnaire data. Meetings were held with the institutional representative for the project and, if necessary, groups of individuals who had previously completed the questionnaire. Although the information gained from the visits was mostly impressionistic, it was indispensable to the design and outcomes of the study. In some instances, data obtained from site visits provided answers to confusing trends in questionnaire data. In others, site visit results differed considerably from impressions that would have been gained from questionnaire data only. Although the respondents completed the questionnaires appropriate to their attitudes, the root cause of their response was not always apparent. The data resulting from the site visits often revealed these causes. One additional valuable body of information was obtained as a result of the visits to the study schools. The trend toward the return to four-year programs was gaining momentum by the time site visits could be scheduled. The section of this report regarding the return to the four-year program is based on data obtained through conversations with study school representatives.

The data from the institutional site visits is presented throughout the discussion section of this report rather than as a separate body of data in the results section.

THREE-YEAR STUDY QUESTIONNAIRE

Rationale and Background

Since the study was attempting to gather information on a phenomenon which began in the late 1960's and which, for most of the institutions involved, ended during the period 1975 to 1977, the approach was a retrospective description of a process. The primary source for the gathering of such data was the survey questionnaire developed specifically for the project. The survey requested respondents to report their opinions at the time their institutions were considering or conducting three-year programs. In addition, since such programs could have a differing impact upon different disciplines and upon different levels of involvement in teaching, administration, and student study, the questionnaire was directed to a wide variety of administrative, faculty, and student respondents. Likewise, in order to obtain the information necessary to describe three-year programs, the questionnaire requested information concerning the decision-making process of the conversion to or adoption of the programs, the ongoing operation of such programs, and the opinions and attitudes of faculty and students as a result of participation in the programs.

Several categories of respondents were chosen. First, respondents were selected from the administration who had responsibilities in general school administration, curriculum administration, student affairs, admissions activities, and research and evaluation of the educational process. For the purposes of this study, respondents from these areas were categorized as administrative.

Second, those individuals directly responsible for the administration of activities within selected departments, namely the department chairmen, were chosen as respondents. Since each department encounters a somewhat different set of problems in the operation of a medical education program, it was considered necessary to include as respondents each of the six medical basic science chairmen (anatomy, biochemistry, microbiology, pathology, pharmacology, physiology) and six clinical science chairmen (family medicine, medicine, obstetrics/gynecology, pediatrics, psychiatry, surgery). Not only do these departments encounter the student at different points in the educational process, they likewise have differing proportions of the student's time in the curriculum, and often, different teaching methods. In addition to the department chairman's knowledge of departmental administration, the chairmen also can provide a different viewpoint from that of the dean's staff regarding the institution's decision-making process and implementation of a new program.

Third, as the perspective of department chairmen differs from that of the dean's staff, so the teaching faculty differ in their viewpoints from the department chairmen. Further, senior faculty often differs from junior faculty in teaching load, interaction with medical students, and involvement in certain aspects of departmental decision-making. Because of the potential differences in views and attitudes regarding the institution's curricular affairs, it was necessary to sample both senior and junior faculty in each of the basic and selected clinical science departments. Professors and associate professors constituted the senior faculty category while assistant professors and instructors were categorized as junior faculty. All of the categories of survey respondents discussed to this point were considered necessary if the study objective of in-depth description and examination of three-year undergraduate medical education programs was to be met. This cross-section of respondents is necessary for coverage of all aspects of the operation of the various institutional programs.

Fourth, the attitudes and perceptions of housestaff or residents was likewise considered important in the description of three-year programs. Since housestaff interact considerably with students during their clerkship, housestaff views of the program, the students, and the student's preparation for the clinical phase of their undergraduate medical education was considered quite valuable to the study. A sample of housestaff from each of the selected clinical science areas was selected to respond in the junior clinical faculty category.

Fifth, the assessment of the graduates of three-year programs was obtained, in part, from a sample of graduate medical education program directors. Selected items from the questionnaire for medical school based clinical faculty were used to construct a brief questionnaire for the program directors. This brief survey served as the study's source of information regarding the three-year program graduate's preparedness, competitiveness, and image in the graduate phase of medical education. As with clinical faculty, the program directors were chosen from six selected clinical science specialties.

Lastly, to obtain the student's perspective of the program at each institution, students from each of the three classes of three-year programs were included in the sampling plan for the study. A separate questionnaire was designed for administration to the students. The questionnaire addressed issues of curriculum time in each of the disciplines, the students' attitudes and perceptions of the program and their reasons for choosing such programs.

The distribution of the various sections of the questionnaire to the respondent categories is shown in Table 3.

The content of items on the questionnaire was developed with the intent to touch upon as much relevant and potentially relevant information as possible. Areas considered important by the project staff, the sponsor, and a technical advisory committee comprised of highly qualified individuals with an extensive background in the field of medical education were examined in the questionnaire. The areas ranged from purely administrative and governance issues to issues of day to day operation within all departments of the medical school, to very subjective opinion statements by administration, faculty, and students. The questionnaire was then pilot tested on a small sample of respondents from each respondent category and confusing items clarified as well as some further items added. This process yielded questionnaire sections which were comprehensive and relevant, yet easily read.

Table 3

DISTRIBUTION OF QUESTIONNAIRE SECTION TO RESPONDENT CATEGORIES

		PROGRAM OPERATION							
RESPONDENT CATEGORY	CONVERSION PROCESS	DEPT. CHAIRMEN BASIC SCI.	DEPT. CHAIRMEN CLINICAL SCI.	FACULTY BASIC SCIENCE	FACULTY CLINICAL SCIENCE	FACULTY IMPRESSIONS	STUDENT SURVEY	PROGRAM DIRECTOR QUESTIONNAIRE	NUMBER OF RESPONDENTS PER INSTITUTION
Administrative - Dean/Staff	X					X			6
Department Chairmen - Basic Science	X	X				X			6
Department Chairmen - Clinical Science	X		X			X			6
Senior Faculty - Basic Science	X			X		X			12
Senior Faculty - Clinical Science	X				X	X			12
Junior Faculty - Basic Science				X		X			12
Junior Faculty - Clinical Science					X	X			12
Interns/Residents					X	X			12
Students							X		30
Clinical Program Directors								X	300*

*Total respondent sample

RESULTS OF STUDY QUESTIONNAIRES

Since the study was designed to describe the process and mechanism of program change, the recognition of differences among institutions and their programs is necessary. The results of the study school questionnaire are therefore couched in terms of the institution as a unit rather than the single respondent as a unit. In other words, the responses of individuals at a single institution were examined to arrive at a single response for each item which best represents the institution. For items with a nominal scale response, the most frequently endorsed response was used to represent the institution provided that at least 50% of the respondents selected that response. When ordinal or interval scale response formats occur, the mean of all responses for a single institution was used to represent the institution response which was then rounded to the nearest half unit on the response scale. For example, on a scale of 5 intervals where 1 represents one end of the response continuum and 5 represents the other end of the response continuum, a mean of 3.39 was rounded to 3.50 or halfway between the third and fourth response interval. Such an institution response might verbally be translated as "slight to moderate positive influence" for example. Results are shown in Appendix C.

In presenting results on an institution basis rather than an individual basis, the generalizations made may hide some differences which actually exist. For example, in the question results of department chairmen and faculty, differences among various departments or specialties are not analyzed. It should be remembered, however, that this variation exists and that the "response" of an institution does not always represent total agreement among departments or individuals within that institution. Where these differences occurred at a noticeable level, they will be noted in the discussion of results which incorporates information obtained during the site visits. However, in order fully to demonstrate the pattern of individual responses to the questionnaire, the response percentages, on an individual respondent basis, are shown for all questionnaires in Appendices D through G.

STUDY SCHOOL QUESTIONNAIRE

Conversion (Initial Process)

Those questionnaire respondents who were administrators (Dean's staff), department chairmen, or senior faculty received a questionnaire with a section of items addressing the process of converting to (old schools) or initiating (new schools) the three-year program. The items obtained information about decision-making processes, the sources of positive and negative influence on the decision and process, reasons or factors influential in the decision to adopt a three-year program, and other related process issues. Respondents to the above categories who were not present at the institution during the time of program consideration indicated on the first item that they were not present and omitted all but the last two items of that section of the questionnaire. The results of this portion of the questionnaire therefore reflect the views of those respondents present during the consideration and adoption of the three-year programs at the eighteen (18) institutions participating in the study. Sufficient response to the Conversion Process (Initial Process) portion of the questionnaire was obtained from twelve old and optional schools and four new schools for their inclusion in the reported results.

Source of Idea. Nine of the 16 schools indicated quite clearly that the initial idea of adopting a three-year program originated from the dean or dean's staff. Four schools indicated that either the dean (dean's staff), the central university administration, or the curriculum committee as the source of the idea. One additional institution indicated either the dean (dean's staff) or a basic science department chairman as the stimulus and one institution quite clearly acknowledged a faculty retreat as the source of the original idea to undergo considerations for a three-year program. The outcome of the school indicating a faculty retreat was the implementation of an optional program. It should be noted that several schools mentioned the use of a faculty retreat in the consideration process, but the respondents felt the stimulus for the idea came from the dean or the medical school administration. All of the old schools with required three-year programs indicated the dean or his staff as the source of the original idea.

Reasons for Consideration. Respondents were asked to indicate the extent of positive influence of each of a number of reasons in the initial idea to consider a three-year program. For all but the new schools, the one reason indicated as having the strongest positive influence on the initial idea was that of financial incentives provided by federal legislation. Two of the old schools indicated this reason as having very strong positive influence. Four institutions (one being a new school) indicated the degree of influence as strong to very strong, while seven schools (two of them new schools) indicated the influence as strong. Lesser levels of influence were mentioned by the remaining three schools. Generally, the old schools stated that federal incentives provided a stronger influence than optional schools. The optional schools rated the influence of federal legislation incentives at the same or slightly less positive influence than did the new schools. For the new schools, benefit to the student in terms of time needed to obtain the M.D. degree was indicated as the strongest positive influence on the initial idea, with all four of the new schools indicating strong influence or greater. For the old and optional schools, this same reason (to benefit the student in terms of time needed to complete the M.D.) was the second strongest influence on the initial idea. The old schools indicated primarily that this reason was of moderate influence while the optional schools indicated that it was of strong positive influence. For new schools, lowering the cost of undergraduate medical education and maximizing the utilization of educational materials and resources were the third and fourth strongest reasons. The cost and utilization issues were generally less influential for old or optional schools where each was rated as having had slight to moderate positive influence in the initial idea. Two optional schools did, however, assign the lowering of cost as a strong positive influence. With the exception of federal legislation incentives, the four new schools rated all reasons as having had slightly more positive influence on the initial idea than did the old and optional schools as a group.

Nature of External Influence. On the question concerning the extent, if any, of external influence during the consideration and/or approval process of the three-year program, four sources were examined - state medical society, members of state government, members of central university administration, and members of the federal government. None of the 16 answering institutions indicated any external influence from the state's medical society. Three institutions (one old and two new) did indicate that there was influence from members of the state government. In addition, one optional school was somewhat divided as to whether there was an influence from members of the state goverment.

Three of the four new schools and three others indicated the presence of external influence from the central university administration, whereas four institutions were divided regarding the presence of this influence. The remaining six schools (five being optional schools) indicated no external influence from central university administration. It is worthy to note that five of the six optional schools, but only one old school, reported no such influence. External influence from members of the federal government was reported by two old, one optional, and one new school. An additional five schools were undecided regarding this influence.

Nature of Internal Influence. Respondents were then asked to indicate the extent of positive or negative influence exerted by various individuals or organizations within the institution during the process of consideration of the idea to adopt a three-year program. Of the sources listed, all schools noted the dean (or dean's staff) of the medical school as the strongest source of positive influence during the consideration process. Only one school (optional) indicated less than strong positive influence by the medical school administration. The four new schools indicated the influence as very strong while the remainder of the schools indicated very strong or strong to very strong positive influence from this source. In addition, the new schools indicated central university administration as exerting strong positive influence while the old and optional schools showed more variation regarding this source with most indicating less than moderate positive influence.

For all schools, executive and curriculum committees were indicated as being second or third strongest positive influence during considerations. New schools indicated these sources as ranging from moderate to strong positive influence while other schools indicated moderate to strong positive influence from curriculum committees and a lesser degree of positive influence from executive committees. The rating of the influence of the executive committee as strong to very strong by new schools reflects the fact that curriculum committees were not yet well established in these institutions. Finally, for all schools, offices of medical education were generally indicated as having had moderate positive influence and clinical science department chairmen as slight to moderate positive influence during the considerations.

Although not asked of new schools, the extent of positive influence of students (student government or SAMA) in old and optional schools was generally indicated as slight or slight to moderate.

The only significant source of negative influence during considerations in old, optional, and new schools was basic science department chairmen. This source was generally indicated as having had slight or slight to moderate negative influence. The only other indications of negative influence were attributed to clinical department chairmen and since they were also indicated as a source of positive influence, it must be assumed that the influence was probably department or specialty specific rather than general among all specialties. When questioned about the "climate" at the institution during considerations, 13 schools indicated the institution was seeking avenues to utilize federal incentive legislation. Seven schools (three old, four optional) indicated also that the faculty was expressing the need for curricular change. In addition, two new schools indicated that the state government was strongly encouraging the adoption of a three-year undergraduate medical education program (this question was only asked of new schools).

The Decision-making Process. The respondents were asked to indicate the extent of participation of several groups within the institution during the consideration of and the decision-making process leading to the adoption of the three-year program. The dean or dean's staff was indicated as having had the greatest extent of participation (extensive to very extensive) by schools in all categories. For old and optional schools, the next most extensive participation was indicated for the medical school curriculum committee. These schools indicated, generally, that the curriculum committee had extensive to very extensive participation in the process. For new schools, the curriculum committee was indicated as having had slightly less than extensive participation and similar levels of participation were noted for the executive committee, basic science chairmen, and office of medical education. In addition, for new schools, the central university administration was seen as having had moderate to extensive participation.

Respondents were asked to indicate the persons or groups which had final veto power in a curricular decision within their institution. For old and optional schools, the dean or dean's staff and the medical faculty (by total college vote) were equally indicated (eight schools indicating each) as possessing this power. For new schools, both central university administration and dean or dean's staff were indicated by three institutions (a respondent was able to check any or all alternatives). All institutions (old, optional and new) indicated that it was not necessary for all departments (basic and clinical sciences) to approve the proposals through votes at department faculty meetings.

In old and optional schools, three groups of persons could have stopped any further considerations: dean or dean's staff (indicated by ten schools), central university administration (indicated by eight schools), and medical faculty by total college vote (also indicated by eight schools). Other groups (executive committee or curriculum committee) were indicated by four schools each. For new schools, response to this same question yielded similar results with the exception of medical faculty by total college vote which was not indicated by any new schools. This exception arises by either a misinterpretation of the question or it is also possible that the faculty was not large enough during considerations to require this mode of approval.

All of the new schools indicated that a final decision was required in a specified period of time. The time period was generally indicated to be about one year although there was some variation among the four new schools with three schools indicating 6-12 months or less.

The response from old and optional schools to the question regarding whether a decision was required in a specified period of time was somewhat varied. Three of the schools (two old, one optional) indicated that it was necessary to decide in a given time period while four (one old, three optional) indicated it was not necessary, and the remaining five were undecided. The length of time from initial idea to final decision, regardless of whether or not specified in advance, was generally from 12-18 months.

Seven of the old or optional schools indicated that students participated, in some manner, in the process of formulating the recommendation to adopt a three-year program. An additional four schools were divided on this question and one school indicated there was no student participation in the formulation process. All four new schools indicated that students were not present during this period in the school's development. Four of the old or optional schools also involved students in the development of the recommendation and approval process. Almost uniformly, the student involvement occurred through student representation on the medical school curriculum committee.

In old and optional schools, respondents were asked if they felt that the initiation of considerations for a three-year program was a means of encouraging faculty to become more concerned about curriculum and become involved in the medical education process. Seven institutions (four old, three optional) indicated that if this was the case, it was only to a very slight extent. Four optional schools responded to some extent that this may have been the goal of the administration. When asked if it had been a means of encouraging faculty to revise the curriculum, the response was generally stronger. Finally, most of the old or optional schools indicated that, to a large extent, the adoption of a three-year program resulted in a reexamination of the quantity of didactic content for which students were to be held responsible.

Changes Resulting from Program Change. All responding institutions (old, optional, and new) were asked to indicate, from a variety of alternatives, what changes occurred in converting to or adopting the three-year program. The institutions unanimously, or nearly so, indicated the following changes:

- Reduction of students' free time
- Decrease of students' vacation

- Reduction in time permitted to basic sciences (old and optional schools only)
- Reduction of student laboratories
- Increase in interdisciplinary teaching (old and new schools primarily)
- Reduction in student elective opportunities

Respondents were again asked to indicate the degree of positive influence of each of several objectives or reasons for the adoption of a three-year program. This time, however, they were asked to indicate the influence of each reason at the beginning of the implementation of the program rather than at the time of the initial idea. For old and optional schools, the indications were essentially the same as those given to the question regarding the initial idea. Namely, financial incentives from federal legislation were most strongly indicated followed by benefit in terms of time required to complete the M.D. Likewise, new schools, although there was more variation, gave the same indications as were given regarding influence in the original idea. The only exceptions were that improved curriculum through the reexamination of content and improvement of the educational process through the identification of relevant information were indicated a little more strongly than indicated on the initial idea. The objective of benefit in terms of time required to complete the M.D. was still indicated as the strongest influence.

For all schools, the general indication regarding which portion of the curriculum underwent the most dramatic change following approval to adopt the three-year program pointed to the traditional first year disciplines (anatomy, physiology, and biochemistry).

Finally, responding institutions indicated that, after the final decision was made to adopt the three-year program, the time provided to accommodate to the new program duration was generally 6-12 months.

Basic Science Chairmen - Program Operation

Department chairmen completed a questionnaire section concerned with department administrative aspects of the three-year program and other department activities. The main thrust of the items in this section was toward comparisons of activities required by the three-year program with those same activities in the previous four-year program at the institution (previous four-year program experience for chairmen in new schools).

Departmental Activities in Three-year Program. Respondents were asked to indicate the extent of changes in their department's overall time spent at various activities in the three-year program compared to what it was in the four-year program. The two activities which, in all categories of schools, increased the most were time spent in curricular revision and updating and participation on interdisciplinary committees concerned with undergraduate medical education. Both of these activities were generally indicated as having slightly to more than slightly increased. For old and optional schools, department time spent on lectures, laboratories, and individual student instruction was more than slightly decreased while research, discussion groups, and vacation time were essentially unchanged except for a tendancy of optional schools to indicate a very small decrease in research activity. Likewise, for old and optional schools there was an indication that some decrease in faculty free time had occurred. The response of new schools to these same activities was somewhat different in the areas of lecture time (essentially unchanged), individual student instruction (generally unchanged), and faculty free time (slightly to greatly decreased).

Regarding the quality of the various activities, old and optional schools indicated that the quality of lectures was basically unchanged with a few schools indicating a small decrease, and one school, a large decrease. New schools indicated that lecture quality was unchanged from their previous experience. Nearly all schools indicated that student laboratory quality had decreased somewhat and, to a slightly lesser extent, departmental research quality. In new schools, the quality of individual student instruction and discussion groups were seen as generally the same, while old and optional schools indicated a slight decrease.

Faculty - Personnel Requirements. Respondents were then asked to indicate to what extent the different faculty and personnel requirement changes were necessitated by the three-year program rather than a general increase in medical student enrollment. Response to this question was quite varied but seemed generally to indicate that, for all categories of schools, these changes were only partially necessitated by the three-year program. About 60% of the schools in all categories indicated that they did have teaching responsibilities in curricula other than undergraduate medical education or graduate programs.

All of the old and optional schools indicated that there were no additional faculty positions made available to departments because of the initiation of the three-year program. But four schools felt there should have been and three additional schools were undecided on this point. Only one new school felt there were not sufficient positions made available for the three-year program and also, only one new school indicated that the three-year program did not require more faculty than a four-year program.

Impact on Departmental Educational Program. The respondent schools mildly agreed that the operation of a three-year program resulted in changes in their faculty's instructional methodologies. The schools also indicated mild agreement that the three-year program resulted in a review of curricular content for their basic science departments. On the other hand, the schools disagreed that three-year programs made it easier to assign and distribute departmental teaching responsibilities, or that three-year program operation facilitates the arrangements of dedicated research time. In addition, based upon basic science chairmen responses, the schools indicated definite agreement that three-year program operation made it more difficult to arrange make-up courses for students who did not pass a discipline (optional schools expressed a little less agreement on this issue) and that it made it more difficult to arrange special tutorial sessions for students who experience irregular rates of progress. Old and optional schools expressed some agreement (moderate for old schools and mild for optional schools) that the three-year curriculum led to a decrease in the basic science department's influence in undergraduate medical education curricular affairs.

Respondents were asked to specify the impact of the three-year program on the effectiveness of facilities/space utilization. The only area in which an impact was noted was for student classroom lecture space. Old and new schools indicated a slight increase in the effectiveness with which lecture classroom space was utilized. Optional schools indicated no change in this area. All other aspects of facilities/space utilization seemed unchanged from that of the four-year programs in old and optional schools. Three of the new schools expressed somewhat more effective utilization of facilities.

Generally, the medical basic science department chairmen in all schools felt that their departments' proportion of the curriculum should have been somewhat greater in order to be optimally effective. This sentiment was even a bit stronger among old school chairmen than those in optional and new schools. Basic science chairmen in eight of the old and optional schools felt that time in the curriculum was not properly distributed between basic and clinical sciences. Two new schools felt that it was properly distributed and three other new schools were undecided. Generally, only about 30% of the schools felt that in the previous four-year program, the time also was not properly distributed.

Differences in First and Second Year of Three-year Program Operation. Regarding changes in time spent in various activities between the first year and second or later years of the three-year program operation, only a few changes were apparent. New schools felt that some slight increases occurred in the areas of individual instruction and discussion/conference groups. Old and optional schools indicated a very slight decrease in these same two and all other activities, with the exception of lectures which were unchanged. New schools also indicated slight decreases in faculty free time and vacation time.

All schools agreed on the areas which they thought would be difficult in preparation for the three-year program. These areas of anticipated difficulty were:

- Arrangement of time for student/faculty discussion groups
- Arrangement of time for individual student instruction
- Arrangement of faculty vacation time

At the end of the first year of the three-year program, the areas which the schools indicated had actually been difficult to administer were:

- Arrangement of time for individual student instruction
- Arrangement of time for student/faculty discussion groups to a lesser extent
- Arrangement of faculty vacation time for new and a few optional schools

Clinical Science Chairmen - Program Operation

Clinical science chairmen completed a questionnaire section concerned with issues of departmental administration while conducting the three-year program and comparisons with identical issues under previous four-year programs. Questionnaires were sent to the chairman of each of six clinical departments (family medicine, medicine, obstetrics/gynecology, pediatrics, psychiatry, surgery) at each of the participating medical schools. Sufficient response was obtained from four old schools, five optional schools, and three new schools on this questionnaire section. The following results represent responses from those institutions.

Departmental Activities in Three-year Program. The first sets of items regarded the departments' time spent in certain activities in the three-year program compared to the time spent at those activities in previous four-year programs. Chairmen were also asked to compare the quality of those activities. The clinical chairmen in all schools generally felt that their departments' time spent in didactic sessions for medical students was essentially unchanged. Additionally, it was reported that time available for faculty to render patient care was unchanged as a result of three-year program operation. For new schools, chairmen generally felt that no change had occurred for housestaff time in teaching students, nor for teaching of physical diagnosis skills. Old and optional schools felt that housestaff time teaching students had slightly increased in the three-year program, and that teaching of physical diagnosis skills had very slightly increased.

All schools felt that clinical departments' time spent in curricular revision and updating had increased as had faculty participation on interdisciplinary committees. Faculty participation in preclinical curriculum and faculty time spent in teaching students were indicated as having somewhat increased for new schools and slightly increased for old and optional schools. The one activity which schools indicated as having decreased because of operating the three-year program was time for faculty to conduct research (more than somewhat decreased for new schools, slightly decreased for old and optional schools), but clinical chairmen in the responding institutions indicated that the quality of these activities was basically unchanged.

Faculty - Personnel Requirements. New schools indicated that slightly to somewhat more senior faculty, junior faculty, and departmental administrative/clerical staff were required in the three-year program, while no increase was required in housestaff. Old and optional schools indicated that only slightly more junior faculty and administrative/clerical staff were required while senior faculty and housestaff requirements were nearly the same. For old and optional schools, there were only very slight increases in strict full-time and geographic full-time faculty and these increases were only slightly necessitated by the three-year program rather than general increases in student enrollment. The new schools indicated increases which were somewhat necessitated by the three-year program in the categories of geographic full-time, part-time salaried, and non-salaried (volunteer) faculty. However, even new schools indicated only a slight to somewhat increased requirement for these categories.

Allocation of Curriculum Time. Clinical chairmen in old and optional schools indicated a very slight decrease in the proportion of the student's time in required clerkships and slight decreases in the proportion of elective time in their departments. New school chairmen indicated a slight increase in the proportion of the student's required clerkship time and a slight decrease in the proportion of clinical elective time in their departments when compared to their previous four-year program experience. All schools indicated a very slight increase in the utilization of in-patients for teaching purposes and no change in utilization of out-patients in the three-year program. Clinical chairmen in all schools generally felt that their department's proportion of time devoted to education had slightly to somewhat increased while the proportion of time devoted to research had somewhat decreased. No change was observed in the proportion devoted to service.

Perception of Student's Preparedness for Clerkships. Clinical chairmen were asked their perceptions of three-year program students' preparedness in various areas when entering their first clinical clerkship. The areas were: (1) ability to take a patient history, (2) ability to conduct physical examinations, (3) ability to formulate a differential diagnosis, (4) ability to formulate a therapeutic plan, (5) overall knowledge of basic science, (6) ability of student to adapt basic science information to the clinical setting, and (7) ability of the student to synthesize (integrate) knowledge in the clinical setting. Responses of chairmen in old medical schools indicated that students were less well prepared in all these areas than previous four-year program students had been. New schools and optional schools indicated that the students were slightly less well prepared in these same areas. The respondents were then asked to give their perceptions of the relative preparedness of the students in the same areas after approximately six months of clerkship experience. At this point, chairmen in the old schools indicated that students were only slightly less well prepared in these areas, except that in overall knowledge of basic science, the students were still slightly less to less well prepared. New and optional schools indicated students were nearly the same as previous four-year program students after six months, but new school chairmen agreed with their colleagues in old schools about the student's overall knowledge of basic science.

Perception of Student's Preparedness for Graduate Training. Clinical chairmen at old and optional schools were generally uncertain as to whether the pool of three-year graduates were as competitive for their own residency positions or other positions across the country as were four-year program graduates. Chairmen at new schools felt that, to a slight extent, three-year graduates were as competitive as four-year graduates in their own programs, but felt uncertain regarding three-year students' competitiveness for residency positions generally across the country. Those chairmen, in old and optional schools, who felt three-year students were not as competitive indicated that they felt four-year program graduates tended to be more mature, to possess more clinical experience, to possess more depth of knowledge, and to a less extent, to have demonstrated better performance in graduate medical education programs. Those chairmen in new schools who felt three-year graduates were not as competitive indicated primarily that four-year graduates tended to be more mature.

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Regarding the preparation for post-graduate programs by graduates of three-year programs, all schools felt that, to some extent, there is a loss in necessary undergraduate clinical experience by three-year program graduates. Old and optional schools additionally felt that, to a slight extent, this "loss" is critical in the student's competitiveness for "quality" positions upon graduation. New schools were uncertain whether or not this "loss" was critical. However, all schools felt that, to some extent, if there was a loss, it could be regained relatively easily during the first portion of the student's residency. Although clinical chairmen in new schools were uncertain, those in old and optional schools felt that they have less information on which to judge the quality of a three-year graduate in the selection of their own residencies. When asked whether or not they, compared to their experience with four-year students, had sufficient information about the three-year program student's performance to write recommendations for post-graduate training, new school chairmen felt, to some extent, sufficient information was available. Old and optional school chairmen felt, only to a slight extent, that sufficient information was available.

Basic Science Faculty - Program Operation

Junior and senior faculty respondents in the medical basic science disciplines completed a questionnaire section regarding their participation in various activities and the impact of the three-year program upon those activities.

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Personal Activities in Department. The faculty of new and optional schools felt that there was no change in the number of lectures they were required to present, while the faculty at old schools felt there was a very slight decrease in lecture activity. Old and new schools felt that laboratory teaching had somewhat decreased while optional schools indicated only slight decreases. Student group discussions were essentially unchanged for old and new schools, but slightly increased for the optional school faculty. Individual tutorial sessions were unchanged only for old schools, with new and optional schools indicating a slight increase. All schools indicated an increase in (1) time spent on committees involved with medical student affairs, (2) time spent in curricular revision and updating, and (3) participation on interdisciplinary committees concerned with undergraduate medical education, and to a lesser extent, time spent in preparation for lectures, discussions, etc. Likewise, all schools indicated a decrease in (1) dedicated blocks of research time, (2) personal free time, (3) personal research activities (proposal writing and participation), and (4) personal vacation time.

Impact on Personal Research Program. When asked what impact the three-year program had on their research productivity, faculty from new schools felt that it had slightly decreased their productivity while old and optional school faculty felt that, under the previous four-year program, they had sufficient continuous research time. However, only half of the institutions felt that there was sufficient time available for research in the three-year program. The schools were undecided as to whether or not adoption of the three-year program caused them to redistribute their periods of research activity. Those who did feel that they had redistributed such time also felt that it had inhibited their research activity.

Personal Activities in Educational Program. Most old and optional school faculty were undecided on the issue of whether the three-year program had increased their interaction with faculty of other departments, while new school faculty felt that the interaction had increased. Those faculty who felt that increased interaction had occurred also considered it a positive effect of the program change even though it generally had not initiated any interdisciplinary research efforts.

About half of the new schools and one third of the old and optional schools felt that the adoption of a three-year program brought about changes in their instructional methodology. New schools felt that the change somewhat increased their teaching effectiveness, while old and optional school faculty felt this effectiveness was unchanged. In old and optional schools, some increase in the use of instructional objectives occurred but generally was not considered a result of the program conversion. New schools, however, very noticeably increased their use of instructional objectives and attributed this increase to their participation in a three-year program.

Impact on Curriculum Content. All schools felt that the content within the various disciplines had more than slightly changed in the three-year program compared to their experience in previous four-year programs. One half of the optional schools, as well as all of the old and new schools, felt that the adoption of the three-year program had resulted in a compression of subject matter in the various disciplines. Old school faculty somewhat felt that the conversion to a three-year program had resulted in a rather extensive revision of content to accommodate the shorter program duration. This was only slightly expressed by the faculties in optional and new schools. Faculty in most schools were undecided on the subject of whether the three-year program had resulted in laboratory teaching becoming more demonstration, although three of the optional schools were certain this was the case.

Perception of Student's Preparedness for Clinical Education. Old and optional schools felt that students in their three-year program were not necessarily as well prepared for their clinical education as were four-year program students, while new schools were basically neutral on the question. With the exception of a few optional schools, all schools generally felt that students were not necessarily as well prepared in their own disciplines as four-year program students had been. Finally, no clear trends were apparent in the utilization or change in the use of associated learning materials (slides, movies, video tapes, etc.) as a result of the implementation of the three-year program.

Clinical Science Faculty - Program Operation

Junior and senior clinical faculty and housestaff in six clinical sciences received a questionnaire section concerned with the impact of the three-year program upon their various activities and the clinical curriculum as compared to their four-year program experience.

Personal Activities in Department. The clinical faculty member's lecture time in the preclinical curriculum was just barely increased for old and new schools and slightly more so in optional schools. The teaching of didactic sessions during clerkships was basically unchanged for old and optional schools, but slightly decreased for the clinical faculty in new schools. The conduct of group discussion sessions during clinical rotations and individual tutorial sessions were unchanged for all schools with only a slight tendency toward increase in the use of tutorial sessions in optional schools. The faculty's time spent in rendering patient care was essentially unchanged for all schools, while the teaching of history taking skills was slightly increased for optional schools, barely increased for new schools, and barely decreased for old schools.

Personal Time in Research and Education Activities. As with basic science faculty, clinical faculty in all schools (slightly more so for new schools) felt that a slight decrease occurred in their dedicated blocks of research time, personal research activities (proposal writing, etc.), personal free time, and personal vacation. Clinical faculty also agreed with their basic science colleagues that their time had somewhat increased in curriculum revision and on committees involved in medical student affairs. The optional schools indicated only a slight increase in these areas. Likewise, some increases in the clinical faculty's lecture and discussion preparation and participation on interdisciplinary committees was felt by all schools, but somewhat more so by new schools.

Other activities were essentially unchanged. Optional school faculty felt the three-year program involved slightly more utilization of in-patients and out-patients for teaching.

Perception of Student's Preparedness for Clerkships. New and optional school faculty felt that students in the three-year program were not necessarily as well prepared in their disciplines as were four-year program students. Old school faculty, however, were generally neutral on this question. The faculty were then asked their perceptions of the three-year program student's preparedness in various areas when entering their first clinical clerkship compared to previous four-year students. Old and new schools generally, on all areas, considered three-year program students slightly to moderately less well prepared than four-year students, particularly in their ability to formulate a therapeutic plan and their overall knowledge of basic science. Optional schools indicated three-year program student's preparedness to take a patient history and to conduct a physical examination as essentially the same as that of the four-year program student, but slightly less on all other areas. Faculty respondents were then asked to make the same comparison after the student had experienced approximately six months of clinical clerkships. At this point, old school faculty generally indicated, in all areas, that three-year students were slightly less well prepared. New school faculty felt the same as old school faculty except that they considered three-year program students about the same as four-year students in their ability to take a patient history and conduct a physical examination, but slightly less well prepared in the remaining areas. Optional school faculty felt that three-year and four-year students were essentially the same in taking a patient history, conducting a physical examination, and formulating a differential diagnosis, and only barely less well prepared in other areas.

Perception of Student's Preparedness for Graduate Training. Regarding competitiveness of three-year students for graduate medical education positions, new and optional school faculty felt that three-year program students were very slightly less competitive than four-year program graduates, while old schools were uncertain about their competitiveness. For those faculty who felt that three-year program graduates were not as competitive, they cited as reasons: four-year program students possess more depth in their knowledge than do three-year program students and, to a lesser extent, four-year program students possess more clinical experience. An additional reason, indicated primarily by optional school faculty, was that four-year program students tend to be more mature.

All schools felt, to a slight extent, that there is a "loss" in necessary undergraduate clinical experience on the part of three-year program students and that, to a slight extent, this "loss" is critical in the student's competitiveness for "quality" residency positions. However, all schools generally felt that, to some extent, this loss can be easily regained during the first portion of the student's residency training. All schools felt that, to a slight extent, resident selection committees have less information on which to judge the quality of an applicant from a three-year program compared to that available for four-year program graduates. However, the faculty in all schools felt that they have sufficient information when requested to write recommendations for post-graduate training.

Impact Upon Instructional Methodology and Curriculum Content. There was essentially no indication that instructional methodology or the use of instructional objectives changed as a result of the three-year program. Faculty in all schools generally felt that content within their discipline for which students were responsible had slightly changed from that which was required of four-year program students.

Impact Upon Personal Research Activity. New and optional school faculty felt that participation in a three-year program had slightly decreased their research productivity, while old school faculty felt the operation of a three-year program had no affect on productivity. New schools felt additionally that they did not have sufficient continuous research time in the three-year program, but felt this was available in their previous four-year experience. Although old and optional school faculty indicated there was also not sufficient continuous research time available because of the three-year program, they were not particularly sure that there had been sufficient available time in the four-year program either. In all schools, those who had to redistribute their periods of research activity due to participation in the three-year program, felt that the redistribution had slightly (old and new schools) or greatly (optional schools) inhibited their research productivity.

Faculty Impressions

The last section of each respondent's questionnaire contained 34 items regarding a variety of attitudes concerning three-year programs, students, and other's views of students from three-year programs. For each statement, the respondent was requested to indicate the extent to which he/she agreed or disagreed with the statement. All categories of respondents at the institutions (except student respondents) completed this section of the questionnaire.

Perceptions of Student Satisfaction. All schools generally indicated mild to moderate disagreement with the statement that students appear to be more satisfied with three-year programs and that three-year programs are generally more relevant to students' needs. Likewise, schools generally indicated mild disagreement that students would prefer three-year programs if there were no perceived differences in types of residencies available upon graduation. Schools also generally disagreed that students are more motivated in three-year programs although optional schools were less in disagreement with this statement than old and new schools.

Perceptions of Student Maturity. Old and new schools indicated mild to moderate agreement that three-year program students appeared to be somewhat less mature than four-year students in their outlook and learning behavior. Optional schools indicated only very slight agreement with this statement. The schools' responses were quite similar regarding agreement that students generally appeared to be less prepared for the clinical phase of their education than four-year program students, with optional schools indicating nearly the same mild agreement as old and new schools. All categories of schools were nearly neutral regarding the notion that three-year program students have more difficulty adapting to the clinical environment than four-year students. When responding to the statement that three-year program students are just as likely to become competent physicians as four-year program students, old schools agreed while optional and new schools indicated mild to moderate agreement.

Old schools mildly agreed with the statement that students in three-year programs appeared to be having some problem with retention of information over extended periods of time when compared to four-year students.

Perceptions of Student Strain. All schools generally agreed (old schools agreeing somewhat more so) that three-year program students are put under a "strain" due to (1) reduction in vacation time, (2) reduction in free time, (3) too much information in too short a time period, (4) having virtually no time to do anything but study, and (5) having almost no time for in-depth study within various disciplines. All schools additionally indicated mild to moderate agreement that three-year program students have less opportunity to develop "role identity" and do not have sufficient time to plan their career goals compared to students in four-year programs.

Sources of Bias Against Three-year Students. All schools indicated that they neither agreed nor disagreed that there appeared to be an unconscious bias against three-year program students on the part of basic science and clinical faculty, or housestaff. However, there was a tendency for schools (especially new schools) to slightly agree that such a bias did exist on the part of those selecting candidates for graduate medical education.

Perception of Content Change and Program Selection. All schools indicated mild agreement that students in their three-year program were held responsible for the same amount of content as were students in the former four-year program. Old and optional school faculty mildly agreed that only students of extremely high academic ability can benefit from three-year programs, although new school faculty were somewhat neutral on this issue. The old and optional schools additionally indicated moderate disagreement that most students selected their institution because it offered a three-year program, while new schools were only very slightly in disagreement with this statement. All schools, however, clearly disagreed that there is more curricular flexibility in a three-year program than in a four-year program, and also disagreed that the time for student learning and synthesis of information was not altered by the three-year program.

Preference for Three-year vs. Four-year Program. Finally, faculty respondents were asked, in their own personal opinion, would they prefer teaching in a four-year program or in a three-year program. Faculty from old schools indicated they would somewhat to definitely prefer teaching in a four-year program. Optional and new school faculty indicated they would somewhat prefer teaching in a four-year program.

FOUR-YEAR SCHOOL DEANS QUESTIONNAIRE

In order to investigate the extent to which the three-year undergraduate medical education program was considered in the nation's medical schools, a short questionnaire was completed by deans of institutions which were conducting a four-year program in 1977. The questionnaire was mailed to 88 deans and 80 were returned.

The deans were asked whether their institution had ever considered the conversion to or adoption of a three-year undergraduate medical education program. If they responded positively, they were requested to specify the major factors which were influential in their consideration. Specifically, they were asked whether the federal financial incentives were a factor and the extent to which the consideration progressed within their institution.

Of the 80 respondents, 28 deans indicated that their institution considered the conversion to a three-year program during the period between 1970 and 1975. Of these 28 positive responses, the two most important positive factors noted as influencing their considerations were the incentives provided by the 1971 Health Manpower Legislation and the possibility of reducing the medical student's time between matriculation and graduation. Other positive factors noted were the reduction in student cost of education, the possibility of an increase in physician manpower, and the encouragement of the legislature.

The negative factors specified by those that underwent some degree of consideration to initiate a three-year program in descending order of frequency of response were: (1) insufficient time for student maturity, (2) educational program would be too compressed, (3) restricted student flexibility, (4) required increasing numbers and time of faculty, (5) educational program logistical problems, (6) program would restrict student electives and clinical science experience, (7) too short a period of time for students to learn, (8) students would be forced to make early career choices, (9) residency selection would be out of phase with institution's educational program, (10) manpower increase would only be recognized for one year, (11) lessening of institutional standards, and (12) no faculty desire. When requested to indicate specifically whether federal financial incentives were a major factor in considering the possibility of conversion, seven deans indicated a definite "yes", while eight said "to some extent".

In order to gain some perspective regarding the extent of the considerations within the institutions, the deans were asked if the consideration of conversion went beyond the level of dean's office. Twenty five of the 28 deans answered in the affirmative and, when asked to specify the groups involved in the consideration, they provided the following in decreasing order of frequency mentioned: (1) curriculum committee, (2) executive faculty council, (3) total faculty, (4) special committee, (5) clinical department heads, (6) office of medical education and research, (7) faculty retreat, (8) governor's advisory committee, and (9) the Board of Trustees. The majority of the deans answering this question included curriculum committee and/or executive faculty council in their responses.

GRADUATE MEDICAL EDUCATION PROGRAM DIRECTORS QUESTIONNAIRE

In an attempt to gather information on the subjective evaluation of graduates of three-year programs, questions were selected from the questionnaire which had been used for clinical faculty in medical schools and were sent to graduate medical education program directors. No new questions were formulated for this group of respondents. In order to obtain regional representation of response, 375 questionnaires were mailed to selected hospital centers in the United States. Because of the limitations on respondent numbers imposed by the Office of Management and Budget, questionnaires could not be mailed to all program directors in the United States.

At least one hospital center was selected from each state which had programs in family medicine, internal medicine, obstetrics/gyencology, pediatrics, psychiatry, and surgery. Although the hospital center may have possessed some affilitation with an academic health center, care was taken to minimize the selection of university based hospitals. Of the 375 questionnaires mailed, 267 were returned.

The following questions were asked of the program directors:

(1) Is the pool of three-year program applicants as competitive for your positions as four-year program applicants?

(2) Generally, across the country, is the pool of three-year program applicants as competitive for positions as four-year program applicants?

If not, why?

(3) Is there a "loss" in necessary undergraduate clinical experience for three-year program graduates?

(4) If there is a loss, is the loss critical in student competitiveness for "quality" positions after graduation?

(5) Do you think this "loss" can easily be regained in the early portion of graduate training?

(6) Do you feel you have *less* information on which to judge the quality of three-year program graduates compared to four-year program graduates?

(7) Do students from three-year programs appear to be less mature in outlook and learning behavior than four-year students?

(8) Would most students prefer three-year programs if there were no differences in the types of residencies available upon graduation?

(9) Do students in three-year programs have less opportunity to develop "role identity" than those in four-year programs?

(10) Do students generally appear to be less prepared for the clinical phase of their education in three-year programs than those in four-year programs?

(11) Is there sufficient time for students to plan their career goals in the three-year program?

(12) Does there appear to be an informal or unconscious bias against students from three-year programs on the part of those selecting candidates for graduate training?

(13) Are students from three-year programs just as likely to become competent physicians as students from four-year programs?

(14) As a consequence of an institution's conversion to a three-year program, is there a general decrease in the importance of basic medical sciences in undergraduate medical education?

Forty-nine percent of the respondents indicated that three-year program graduates were not as competitive for their positions as four-year program graduates, while 17% were uncertain. Fifty-five percent of the respondents indicated three-year program graduates were not as competitive generally across the country and an additional 22% were not certain. The reasons stated were the increased maturity, more clinical experience, and more in-depth knowledge of the four-year students.

Eighty percent of the program director respondents indicated that there was a loss in necessary undergraduate clinical experience on the part of three-year program graduates. Seventy percent of the respondents indicated this loss was critical in student competitiveness for "quality positions". On the other hand, 57% of the respondents indicated this loss could easily be regained in the early portion of their residency.

Seventy-nine percent of the respondents noted that students from three-year programs appeared to be less mature in their outlook and learning behavior than four-year students. When questioned about whether students have less opportunity to develop "role identity" or are less prepared for the clinical phase of their education, 83% of the respondents agreed with the role identity issue and 80% stated they felt students were less prepared. Eighty-one percent of the program directors stated that there was not sufficient time for students to plan their career goals in three-year programs. It was interesting to note that

63% of the program directors indicated that there is an unconscious bias against students graduating from three-year programs. Conversely, 70% of the respondents indicated that three-year program graduates are just as likely to become competent physicians as students graduating from four-year programs.

When the respondents were viewed in terms of their specialty, it was very clear that the area of obstetrics/gynecology was most critical of three-year program graduates. Their responses were generally negative regarding students' competitiveness, their maturity, their role identity, and their preparedness for clinical education. The sense of bias toward three-year graduates was followed by surgery and medicine. The responses were more distributed, thus less polarized, in the areas of pediatrics, family medicine, and psychiatry.

STUDENT QUESTIONNAIRE

The Student Questionnaire, which was sent to samples of students at the study schools, requested information on a variety of issues including reasons for their choice of a particular medical school, their reactions to various aspects of the curriculum, and their opinions regarding the advantages and disadvantages of the three-year program. These results are based upon 179 completed and returned questionnaires from a total of 303 questionnaires sent to student respondents. It is important to point out, again, that several study schools had already graduated their last three-year class prior to the project's receipt of

OMB clearance. Hence, the student sample does not represent responses from those institutions. Additionally, the time at which OMB clearance was finally received and questionnaires mailed to the students coincided with examination and vacation time at many of the study schools. Therefore, the response rate was lower than it would have been at a more appropriate time during the academic year. The distribution of first, second, third, and fourth year students among the student respondents is shown below:

	N	%
First year	62	34.6
Second year	55	30.7
Third year	53	29.6
Fourth year*	9	5.0
	179	99.9

*These respondents were students who chose to go a fourth year in an institution which was going to a four-year program.

Frequency distributions and percentages for each item response appear in Appendix C.

The most influential factors in the student's choice of a school to which to apply, and the percentage of respondents indicating the factor were (1) perception of the school's reputation (62.9%), (2) state supported school in the applicant's state of residence (61.8%), and (3) tuition and associated education costs (42.7%). The length of the school's curriculum was considered influential by only 29.2% of the respondents. Among the respondents, 60.3% indicated that they were currently attending the school of their first choice. Additionally, only 27.9% stated they had selected the present school because it had a three-year program. Those students who did select the school because it had a three-year program indicated they felt the main advantages were (1) gain of one year and thus, graduate earlier and (2) the learning requirements of the three-year program are different from those in a four-year program. Over half (53.1%) of the respondents felt that whatever advantages they saw, initially, in the three-year program are still, in their opinion, advantages. However, 29% of the respondents did not feel that way.

The primary areas in which students felt that not enough time was allocated in the three-year program were (1) personal free time and vacations, (2) personal study time, (3) clinical electives, (4) didactic sessions during clinical clerkships, and to a lesser extent, (5) clinical relevance of basic science information, (6) anatomy and pharmacology lectures and laboratories, and (7) small group discussions in basic science disciplines.

Students generally agreed that there was not as much free time, individual in-depth study time, or time to resolve personal problems as was the case for four-year program students. Three-year students felt, generally, that there was more "strain" in terms of time than is present for four-year students. Three-year students were also somewhat undecided as to whether or not they were as well prepared for the clinical portion of their education as were four-year students. They additionally agreed that three-year students feel somewhat uncomfortable about their level of knowledge because they do not have the opportunity to thoroughly learn the subject matter. They disagree with the idea that the three-year program is more relevant to society needs than four-year programs. Finally, they indicated they did not always receive favorable impressions from faculty regarding the three-year program and they were not more highly motivated due to the shortened time required to attain the M.D. When asked if they would again choose the three-year program, 46% expressed some doubt.

THE PROCESS AND IMPACT OF PROGRAM CHANGE

The recommendation of the Carnegie Commission on Higher Education in their 1970 special report (2) recommended the consideration of means to shorten the time from entry into premedical education to the awarding of the M.D. degree. Among their recommendations was the "straightforward revision of the curriculum for M.D. and D.D.S. candidates so that required courses could be completed in a three-year period" (2, p.47). In the report, the recommendation was strengthened by indicating, "If all medical schools were to move from a four-year to a three-year program between the baccalaureate and M.D. degrees, the size of each class could be increased by nearly one-third without increasing the total number of students enrolled at any one moment of time and without requiring additional physical facilities" (2, p.48). The financial incentives present in the 1971 Health Manpower Legislation also indicate that the Congress was clear in its intent to encourage the development of three-year programs. Furthermore, the increased funding levels for special projects grants in the area of program shortening provided additional incentive for institutional consideration of initiating efforts in this area. Information obtained from the site visits of this study revealed that state legislators were also encouraging schools of medicine to shorten their programs in order to accelerate the graduation time of their constituents.

The 1970 Carnegie Commission Report (2, p.48) provides a number of reasons for the recommendations for three-year undergraduate medical education programs: (1) the supply of physicians could be increased more rapidly if the total duration of the student's education could be reduced, (2) student's loss of foregone earnings would be reduced, (3) the total amount needed for student assistance would be possibly less, (4) the possibility of a savings of up to one-third in operating expenses, (5) institutional cost per student would decrease by about one-third, and (6) the possibility of nearly a one-third increase in the size of each class, if all schools were to move from a four-year to a three-year program. Proponents of three-year programs frequently gave, as a reason for the programs, the addition of one year to the practice life of the physician by the graduation from a three-year rather than a four-year program.

With these apparent advantages to both student and institution, and the presence of provisions for increased federal capitation, it is necessary to contemplate why only 23% of the nation's medical schools initiated a three-year program. Furthermore, as of the writing of this report, only 8% of the nation's schools of medicine have continued a three-year program with at least 10% class enrollment, and of this group, four have indicated they will definitely return to, or will have begun to phase in, the four-year program within the next calendar year. Table 4 shows the number of U.S. medical schools conducting three-year programs during the study period. Since a relatively small number of institutions initially developed three-year programs and a much smaller number have retained them, it is important to examine the failure of these programs.

Table 4*

Number of U.S. Medical Schools Conducting Required or Optional Three-year Undergraduate Medical Programs: 1970-1971 to 1975-1976**

Academic Year	Required	Optional***
1970-71	4	6
1971-72	7	6
1972-73	18	7
1973-74	20	7
1974-75	18	6
1975-76	14	5

*Provided by Bureau of Health Manpower, Health Resources Administration

**Does not include six-year programs

***Does not include optional programs with less than 10% of class in option

Because of the events which have transpired during the duration of this study, the discussion of findings can be presented with a reasonable assurance that few three-year programs that were present during the period of the study will continue. In retrospect, one can attempt to find answers as to why only a small percentage of institutions chose to operate a three-year program by analyzing the experiences of those who elected to introduce and subsequently eliminate these programs. As indicated earlier in this report, the study school questionnaire was designed to gain information about the reasons for conversion as well as the processes of adoption, conversion, and operation of the three-year program. It was apparent at the beginning of the study that some institutions were returning to the four-year program, but at that time the magnitude of this movement was not yet evident. As the study continued, our conversations with institutional representatives revealed an increasing number of three-year program institutions considering a return to the four-year format. Thus, in the examination of the questionnaire data, one could take the perspective of not only describing the process, but attempting to analyze what could have attributed to the dissatisfaction with the conduct of the program. The project staff then began to take a closer look at the institutional process of change and the impact of this process on the continuance or elimination of three-year programs. Through the examination of this information, the reasons and data supporting the apparent failure of the three-year programs could then be documented.

The discussion will be presented in three sections. The first will address the process of change and the implications of the process on actual program operation. The second section will describe the impact of the program on (1) the educational program, (2) the faculty, (3) the institution, (4) student and student performance, and (5) the national health manpower pool. The final section will emphasize the apparent reasons and the process of the return to the four-year program.

As one reads this report, it is essential to recognize the differences in responses emerging from faculties of old, new and optional schools. The responses from the faculty at the old institutions must be viewed in the light of their history of participating in four-year programs. These individuals participated to a varying degree in the deliberations and processes of program conversion which, in some cases, was a reduction of their discipline in the curriculum. At the least, most faculty experienced some degree of change in their schedules. Calendars were changed, institutional procedures were changed, and, in many cases, faculty were not convinced the method coincided with the desired outcomes. Generally speaking, faculty members in new schools were aware a three-year program existed or was planned when they joined the faculty. Also, these faculty participated, to a much greater extent, in the development of the educational program and felt more "ownership" to the product of their labors. Lastly, the environment at a new institution is not contaminated with "institutional tradition". Flexibility is necessary in the building of a new institution and its programs. Faculty responses from schools maintaining optional programs is often between those from old and new schools. If a specific track exists and possesses its own faculty, some characteristics observed from new schools emerge. If faculty teach in the regular and optional program, comparisons, and therefore attitudes, are often based on factors other than perceived student quality. It is very clear from this study that the optional programs which require the least amount of departure from the activities and calendar of the four-year program are the most durable.

PROCESS OF PROGRAM CHANGE

In the documentation of the process of change, considerable information evolved from the site visits conducted by the project staff. The site visits were designed to validate response patterns elicited from the questionnaire and to pursue further the change mechanism within the institution. Using the questionnaire data as a point of reference, the site visitors were able to meet with the individual or group who provided the stimulus for the change and to confer with the various groups who were involved in the decision-making process and the ultimate implementation of the program. It seemed appropriate to develop a hypothetical construct of the change. The response patterns and institutional site visits results were then compared with this construct to provide a descriptive analysis of the program change. Since, at the time of the writing of this report, evidence was firm regarding the trend away from three-year programs, one could then attempt to identify the points in the system which contributed to the lack of endurance of the three-year program experience.

To serve as a background for discussion of program change, the following elements are suggested as necessary components to undertaking the considerations and the eventual implementation of a new program: (1) the identification of the reasons within the former program which provided the stimulus for change, (2) the establishment and definition of the goals, and thus, the desired outcomes of the new program, (3) the entrance of the proposal into the institutional decision-making process, and (4) upon approval, the development of a mechanism to implement, or in the case of this project, to convert to the new program. In addition to these elements involved with the actual change itself, it would also be appropriate to establish a system of program monitoring and evaluation to assess the new program.

Stimulus for Change

The documentation and assessment of the multitude of influences which come to bear on the change of an educational program would, at best, be difficult in an isolated system. When consideration is given to the variety of responsibilities carried out by the faculties of our nation's academic health centers, the isolation of specific influences to specific institutional programs borders on the impossible. The conduct of an educational program by faculty equally responsible for research and patient care results in a sharing of manpower and resources within the institution. Thus, changes in one educational program not only affects the other educational program responsibilities of the faculty, but also the execution of their other institutional responsibilities of research and patient care. Although it is very apparent to administrators and faculty within schools of medicine, the process an institution undertakes to make what appears to be a simple change in program duration is extremely complex. Large numbers of the faculty within the academic health center participate, to some degree, in the undergraduate medical education program. The size of this group makes communication of all events in the change process virtually impossible. Even if the agent of change is identified, faculty often are not aware of the stimulus and reasons for the suggested change. This becomes a rather significant issue when the faculty are questioned regarding their attitudes toward the new program because they often respond in the absence of data. Conversely, it is clear from the results of this study that the mechanism utilized by the administration in the process of change greatly affects the attitudes of the faculty. Oftentimes, the lack of accurate information possessed by the faculty is the result of poor, or in some cases, no communication from the administration. Thus the essence of change, a different educational program, becomes the object of animosity and dissatisfaction which have been generated by the execution of the process and not the product.

For those institutions that previously conducted four-year programs, the conversion to the three-year program was minimally related to their dissatisfaction with the four-year program. In the old and optional schools, faculty and administration indicated that the main reason for the conversion was not curriculum related. If dissatisfaction was expressed about the four-year program, it was concerned with curriculum methodology and not program length. When asked about the "climate" at the institution when the considerations for a three-year program were underway, only three old schools indicated that the faculty were expressing a need for curriculum change. In these schools, the program was not only shortened, but extensive curriculum revision took place at the same time which changed a discipline organized curriculum to one of approaching content through the organ systems method. It is interesting to note that the site visitors often heard the expression of concern to shorten the overall time from high school graduation to the awarding of the M.D., but not to compress four years of medical education into three years. Also of interest to the site visitors was the frequency of the statement that the ideal length of medical school would be three and a half years.

Therefore, the genesis of the idea to develop a three-year program had little to do with dissatisfaction with the content of the four-year program. Even among the deans of four-year institutions, curriculum or educational program issues were not stated as positive factors in their considerations. As in the new schools, the reasons were concerned with student and institutional finance. In the initial idea to consider the program and throughout the consideration process, the main factor which could be related to the educational program was the concern to assist the student in terms of time needed to complete the M.D. and secondarily, to lower the cost of undergraduate medical education. Of further interest is that in the new schools, the strongest influence on the consideration of the three-year program was to shorten the time between matriculation and graduation. Also, lowering the cost of undergraduate medical education occupied a higher priority in the new schools than in the old.

Goals for Change

The one clear message emerging from the site visits to all old schools, and to some degree, new schools, was that the stimulus to consider three-year program initiation at the institution was provided by the financial incentives contained in the 1971 Health Manpower Legislation. Fogel states, "I think it would be fair to state that this (questionable pattern of pedagogy) was not medical school activism, but reactivity to the incentive dollars that were dangled by the government to shorten the curriculum" (4, p.170). In the survey of deans of four-year schools, these same incentives were also given as the most frequent response if they had considered the conversion to a three-year program. Furthermore, the primary goal in encouraging and conducting the three-year program was, in the vast majority of schools, based on the institution's objective to acquire additional funding through this action. Interestingly, in over one-half of the study schools, substantial pressure was exerted directly or indirectly by state government to seek this avenue for additional funding. In a number of the site visits, statements were made by administrators to the effect that, "We went to the three-year program to gain additional funding, hire additional faculty, and gain political favor with our state legislators". This is not to imply that institutions were not concerned with the quality of their educational programs. It only indicates that the driving force from initiation to implementation was, in the main, the goal of acquisition of additional funding. Few institutions expressed the viewpoint that the original reason was to improve the quality of the educational program.

The issue of the politics with state legislatures is an important one. Although not discernible from questionnaire responses, the incentives or pressures on a substantial number of state supported institutions by the state government was considerable. Several deans indicated the conversion to the three-year program was as much a political decision as a financial one. State legislators had obtained the message that one could more rapidly increase physician supply and lower the student cost with three-year programs and consequently began to encourage their resident medical schools. In order to demonstrate the willingness to respond to the state's needs, several schools initiated the idea for the shortened program. The decision was also one of insurance. If the medical schools could show their willingness to respond, future funding in areas not yet receiving appropriations would be more probable. State government pressures were also present on a number of the newly developing state supported medical schools. Although the initiation of these programs was more to benefit the student in terms of his time in medical school and to lower the cost of undergraduate medical education, the implementation of the three-year program in several of these institutions was based considerably in political considerations.

In some state supported institutions, the funds gained through federal sources were simply additional funds to the medical school budget and did not affect the level of state support. In two instances, a sizeable portion of the federal support was compensated by a reduction in the level of state support and consequently, the state government realized an overall budget savings. Therefore, it is clear the majority of the external influence to the decision to consider and/or adopt the three-year program came from either the financial incentives provided by the federal government or the influences exerted by members of state government.

An interesting point concerned with the politics of change emerged from the site visit discussions regarding the faculty's perception of the institution's goal in encouraging a three-year program. The faculty, in many institutions, viewed the impetus for the program change to be "outside"; outside their department and outside the institution. Since many of them were aware of the level of their colleagues' dissatisfaction from other departments, the blame for intrusion into departmental curricular affairs was placed on the medical school administrative staff. They recognized that the medical school administration was responding to financial incentives, but they felt there was a limit to the sacrifices a school must undergo to acquire additional funding. It was very clear that the faculty were, in many cases, either uninformed or did not make the effort to gain information on the institutional goals for the change.

The perception of administrative decisions by the faculty deserves further comment. A full understanding of all administrative decisions and their implications on all phases of institutional operation cannot, for practical purposes, be communicated to the faculty at large.

Similarly, the direct responsibilities of the faculty would minimize the available time for them to thoroughly study all background information, even if such information was available. Consequently, faculty are more concerned with the implication of decisions that directly affect the execution of their assigned responsibilities and the performance of those tasks which contribute to their professional growth and recognition in their department, i.e., research and service. Hence, the dilemma: on one hand, the administration is rendering and evaluating decisions with knowledge of the "trade-offs" that must be made for the total institution, and on the other hand, the faculty is weighing these decisions with a genuine concern for their discipline, but from a more limited perspective. In those institutions with considerable faculty opposition, there is some question whether the faculty would have agreed with the three-year program decision even with the possession of all the background data to the decision. Since there was basically no difference in objective student evaluation in three-year programs, the opposition of faculty was more to "quality of life" issues regarding themselves and the students. This is somewhat exemplified by the response of faculty to the question, "In your own personal opinion, would you prefer teaching in a three-year or a four-year program?" Over 75% of the respondents preferred teaching in a four-year program with only 5% indicating a preference for the three-year program. Nineteen percent stated no preference. These percentages were somewhat surprising considering the high satisfaction level that was exhibited at the new schools during site visits.

When conversing with faculty during the site visits, many of them were convinced that the bonus made available for graduates of three-year programs was the main reason that their administration desired the program. Little mention was made by the faculty on the funding levels achieved by their institution through special projects grants and student enrollment increases. This, again, is partially explained by the fact that special projects funds have less impact on the faculty directly. As one individual stated, "Special projects awards are not the kind of dollars that "turn on" faculty!" Clearly, the major source of the additional institutional funds associated with program shortening did not come from graduate bonus incentives. The examination of the special projects awards in the program shortening category for institutions comprising this study accounted for at least one half of all awards from 1972 to 1974 (1972 - 63%, 1973 - 53%, 1974 - 54%).

The 1976 Carnegie Council on Policy Studies in Higher Education Report states, "The failure of accelerated programs to spread to all medical schools appears to be attributable to opposition within some medical school faculties and perhaps, also, to diminution of a sense of urgency about the need to shorten the duration of medical education as concern over shortages has been replaced by references to impending surpluses" (5, p.56). The statement concerning faculty opposition is supported by this study, but it is also clear from the trends exhibited in this study, that in the opinion of administrators, three-year programs diminished because funds diminished. The goal for the movement of these programs was, in part, achieved and since continued external incentives were in question, schools returned to four-year programs. The goal was not totally achieved because institutions never realized the $6,000 bonus. It is interesting to speculate what would have happened if the schools had received the full $6,000 bonus for three-year program graduates. It is quite possible that when it was apparent that the funding would not reach expectations, and given the level of faculty opposition observed at other schools, institutions may have felt the effort was not worth the problems.

Process of Decision Making

Since the initial idea for the three-year program was presented by the dean and/or members of his staff, it is not surprising that the strongest positive influence during institutional considerations came from this same office. Extensive participation in the decision making process was contributed by the schools' executive and curriculum committees.

The organization and governance of curricula provides somewhat startling contrasts from the areas of research and service. Research and patient care activity are almost exclusively departmentally based and even in areas of interdisciplinary research, specific guidelines are established concerning individual contributions to the total project. Personal and professional rewards in these areas are clear to the faculty and they are fully aware of their contribution toward the promotion and tenure cycle. In spite of the fact that discipline contributions to any educational program arise from within the department, the governance of this phase of institutional activity is oftentimes not clear. During the site visits, the "power" and jurisdiction of the institution's curriculum committee was queried. In some cases, the curriculum committee was actually a student promotions committee being primarily concerned with students' academic progress and promotion and possessing minimal influence in overall curriculum policy and program evaluation. In other instances, the curriculum committee was empowered with curriculum governance and rendered decisions which affected discipline input to the curriculum.

The functions are important in considering the nature of the curriculum committee's participation in the decision making process. The process of ratification of a decision from the perspective of student promotions is somewhat different from considerations viewed from the perspective of curriculum governance. It was very evident from conversations on site visits that in those institutions where the curriculum committee performed a student promotions function, curriculum decisions were essentially made by negotiations between and among chairmen and between chairmen and an administrative officer. Departmental lines were drawn tighter in these situations. Compromises, and more importantly, the process of compromising were not experienced by the teaching faculty.

Those situations where curriculum committees made all decisions concerning the undergraduate medical program demonstrated somewhat more direct participation by more junior and senior faculty. Gronvall and

DeMuth (6) refer in their study to the problem of departmental autonomy in rendering interdisciplinary decisions. This was fully supported in the present study and was further evident even when non-interdisciplinary decisions were made on curriculum affairs. It is important to note that many of the characteristics of change, factors of participation in decision making and curriculum governance documented in Hubbard, et.al. (6) were present in the current study of change in program duration.

Two of the schools in the old school category went through a rather extensive process of consideration and implementation of the three-year program. Open hearings were conducted over long periods of time to permit participation and input from all levels of faculty. Although many of the sessions were considered "bloody", the satisfaction level of the faculty with the three-year program was higher in these institutions than in those schools where provisions for direct faculty input were minimal. Although dissatisfaction was expressed with the final decision, the faculty took advantage of the opportunity to comment and suggest mechanisms for resolving the problems of scheduling and content review. It was very evident from the site visits that the "happiness level" of the faculty was higher in those institutions that took the time to endure extended faculty committee deliberations on the issue of a three-year program. It was also apparent that if the "change agent" was a respected and revered member of the faculty, the ratification of the decision and the actual program transition was greatly facilitated.
At least two schools in the present study could attribute the high level of faculty animosity and opposition to the method used to introduce and

consider the decision and the unfavorable attitudes of the faculty toward the individual leading the change effort. The residual attitudes precipitated by these circumstances were unrepairable.

If the considerations to convert to a three-year program were accompanied by considerations to dramatically revise the curriculum, i.e., from discipline orientation to organ systems, the decision making process became so involved that faculty often could not separate one from the other. The events at two study schools serve as illustration of this point. At one institution the faculty were finally to the point of voting on one of three issues: to adopt or convert to the three-year program or to change from a discipline based curriculum to one with an organ systems approach, or both. The vote resulted in a three-year program. When talking with faculty, they clearly indicated they had voted for the "lesser of two evils". In another institution, the deliberations and conversion to an interdisciplinary curriculum occurred several years in advance of the move to a three-year program. The conversations with faculty, after they had already returned to the four-year program, yielded complaints chiefly on the interdisciplinary curriculum, not the three-year program.

In the institutions that both shortened and changed approach to content, and to a lesser degree, in schools where content revisions (albeit small) were made, it was very clear that many faculty translated their unhappiness with the content approach to the three-year program.

The principal source of opposition during the considerations emerged from the medical basic science department chairmen. Because the major program changes that resulted from the conversion process occurred in the basic science departments, this response indicates either a retrospective evaluation or that a preliminary plan had been presented during the consideration of the proposal to convert. Several factors influence this opposition. The first is obviously the strength of the department in the institution and the threat of losing influence in the curriculum. This loss of influence in the curriculum was further regarded as a loss of status or prestige in the institution. Also, budgetary retrenchment in many medical schools became apparent in the period 1970 to 1975. Department chairmen were restricted in their ability to hire new faculty and were assuming more programmatic responsibility for other programs in the institution. Sixty percent of the schools in the study have basic science departments that service other health professions curricula. Slight movements in the calendar activities of their department affect their assignment patterns for teaching in the other health professions. Basic science faculties were also beginning to encounter more difficult times in the ability to obtain basic research support. So when faced with these situations and then further requested to reduce the amount of time their department was contributing to the undergraduate medical education program, feelings of departmental insecurity arose. To a significant degree, departments view their status in the undergraduate medical education program by the number of student contact hours they occupy in the curriculum.

The change process and influences on the system differ in new schools. The faculty join the institution with the knowledge a three-

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year program will be conducted. The site visits revealed a much higher comfort level in the faculty of these institutions. The feeling of participation in the decision making process and having a part of the new venture was evident during the site visitors' meetings with the faculty. During the developmental phase of the institution, faculty were devoting large portions of their time to undergraduate medical education affairs. Of necessity, and by convenience, they interacted with colleagues in other disciplines and curricular content and time negotiations were conducted with knowledge of the other discipline's problems. The dynamics of the development of these programs carried over into their operation. Thus, it should not be surprising that of the seven schools still operating required three-year programs, four were classified as new schools in this study. It is interesting that as the faculties of new institutions enlarged and departments became more secure, increased sentiment to convert to a four-year program was observed.

Finally, one of the minimal requirements to accommodate a program change is the provision of sufficient time to undertake consideration and changes. The average length of time from the initial idea to the final decision was between 12 and 18 months. Additionally, the time provided to accommodate or implement the new program was between six and 12 months. Site visit information indicated some confusion in the answering of this question. Faculty members were often not aware when the initial idea was considered and thus, could not provide an accurate response. Others indicated that the total time from the initiation of the idea until the entrance of the first student in the three-year program was approximately 12 months. It is safe to assume that the total process from initial idea to the entrance of the first student was in the range of 12 to 18 months, with most schools falling in the 12 month range.

IMPACT ON EDUCATIONAL PROGRAM

The changes which occurred in the curriculum on the conversion from a four-year to a three-year program were limited almost exclusively to the preclinical sciences. Changes were evident in the student's incentives for the selection of clinical electives, but the changes within the required disciplines of the medical school program occurred chiefly in the medical basic sciences. An investigation of the hours for each discipline prior to the conversion and at least one year following the first year's operation of a three-year program was conducted. Although the curriculum schedules from all study schools were examined for trends in curriculum change, the schedules from schools comprising the old school category were analyzed. The hourly contributions of each discipline and available student free time were tabulated and comparisons were made between similar calendar years. Table 5 illustrates an average total reduction of 700 hours of formal discipline instruction within six basic science disciplines from that provided in the four-year program. The disciplines that traditionally occupy the first year of instruction experienced the highest percentage of reduction in hours.

In all the basic sciences, the mode of instruction most affected was the laboratory.

Extreme care should be exercised in the interpretation of these data. Although there is no doubt that the hours of basic science decreased in the study schools, the cause of this reduction is not solely because the institution converted to a three-year program. New subject areas and courses of instruction were being introduced into the basic science years during this period, and chairmen stated during site visits that if the institutions had remained on the four-year program, a reduction in basic science hours would still have occurred.

Table 5

Average Medical Basic Science Instructional Hours
Before and After Implementation of Three-year Program

Discipline	Before	After	% of Discipline Time Retained
Anatomy	531	267	50
Biochemistry	214	99	46
Microbiology	185	138	75
Pathology	328	198	60
Pharmacology	135	111	82
Physiology	250	140	56
Total	1,643	953	

As indicated by Henja, "Behavioral sciences have taken on a new importance and time need in the curriculum...This tends to erode the basic science time..." (7, p.387). The area of behavioral science was introduced into the first two years and in the study schools averaged approximately 100 hours of instruction. The Introduction of Clinical Medicine Course was enlarged to include early exposure to patients and was expanded into the basic science years. A number of schools introduced clinical correlation sessions which were not classified as formal discipline lectures, although basic scientists participated in these sessions. Lastly, the reduction in laboratory instruction was a national phenomenon. Conversations with chairmen of basic science departments supported the opinions that substantially more laboratory hours had been lost because of the trend in medical education than the conversion to a three-year program. But, it was evident that if laboratory time existed before the conversion, it was more likely to be eliminated than lecture time.

In the preclinical sciences the trend was to change the curriculum time from 18 months of instruction in a 24 month period to between 15 and 18 months of instruction in a 16 to 19 month period. In most institutions, no break was provided between the traditional first year and second year disciplines. The length of clinical experience remained virtually the same before and after the conversion averaging 18 to 20 months of instruction over an 18 to 21 month period.

The change in the program was more in its distribution of discpline hours and its calendar year timing than its reduction of content. In order to adjust the educational program to synchronize with the timing of the administration of the National Boards and the National Residency Matching Program (NRMP), freshmen began medical school in the first part of July rather than in September of October. Blocks of student vacation time in many institutions were reduced. The summer vacation between the freshman and sophomore year that existed in the four-year program was eliminated and vacations during the calendar year were limited to two to three weeks at Christmas and a period in the spring of the freshman year. In order to provide some additional vacation time, periods (one to two weeks) were planned at the end of the preclinical science instruction. Curiously, the average student free time during the instructional week within the study schools did not significantly change. In fact, in several institutions, *weekly* student free time increased slightly. Thus, the significant degree of "stress" in the basic science portion of the curriculum indicated by the faculty and students was a product of the density of the curriculum over an extended period of time. As one faculty member stated, "The vacation time available and how it is used by the students is not as important as the students' anticipation of its arrival".

The subject of curriculum density deserves comment. Even though available free time during the instructional week essentially remained the same for the student, the program changes resulting from the conversion often caused the student's feeling of overload. As previously indicated, laboratories were being drastically reduced in basic science disciplines and yearly calendars were being compressed. Students, in a substantial number of schools (particularly old schools), were being exposed to increasing numbers of lectures over shorter periods of time. Disciplines that formerly were distributed over eight months in the curriculum were now being presented with information via lecture. In spite of efforts to "break up" the lecture schedule with clinical correlation sessions and small discussion groups, the heavy dependence on one mode of information transfer in the learning process was being felt by students. Additionally, since the student was now sitting for more lectures, preparation for those lectures also increased. Both basic science and clinical science faculty expressed the concern that students were increasingly relying on lecture handouts and less o assigned and independent reading. In this environment, the reduction in laboratory time was a rather unfortunate occurrence. As one faculty member noted during one of the site visits, "Not much teaching goes on in the laboratory, but a great deal of learning occurs". Considerable concern was expressed both by students and faculty about this change in learning style. The curriculum offered little incentive, or at the least, time for independent study. Furthermore, the strain which "set in" with students when they were given free time was such that unscheduled time became a frustrating period due to the volume of study they knew they should be doing. The schedule could be maintained with some enthusiasm for a period in their first year, but as students and faculty both stated, the "wear and tear" began to show in the traditional second year disciplines. The faculties of microbiology, pathology, and pharmacology constantly referred to the fact that the students were extremely tired by the time they arrived at their discipline.

The discussion of the stress experienced by the three-year program student must be tempered by the experience of students in four-year programs. Through the experience gained by faculty who had worked in four-year programs, they indicated during the site visits that it is equally safe to state that if students in four-year programs were questioned, they would also declare a considerable amount of strain. Furthermore, if the faculty presenting subject matter to the students in three-year programs perceived a cutback in their disciplines and, because of a legitimate desire to assist the student, presented as much information as possible in a shorter period of time, both the students and faculty will express strain. If the faculty tell the students that they are not obtaining enough exposure in their respective disciplines, but that the faculty will do the best they can, students become apprehensive. If students hear this from a sufficient number of faculty, it is worth considering that the student's strain is simply a projection of the faculty's dissatisfaction with the program. This phenomenon was evident in several of the study schools. Therefore, although all evidence points to the fact that a 15 month curriculum that was formerly presented in 18 months is more intense, a portion of the "quality" of the stress and strain perceived by the students was contributed by the faculty.

As previously indicated, in the vast majority of participating schools, few changes occurred in the required clinical portion of the undergraduate medical education program. In some cases, the sequence of clerkships was altered, but the time students spent within a particular clinical service did not differ significantly from that in the previous four-year program. The clinical faculty expressed some concern that students were not provided with as much opportunity for clinical electives in the three-year program. The examination of institutional data found this to be a problem of the variety of electives selected rather than a restriction of opportunity. Because of the timing of application to NRMP and the shift in the academic calendar year due to conversion to a three-year program, students were required to choose certain clerkships in order to aid in their decisions on career choice. According to one school official, "Students had to make career choices too soon - for some as soon as 18 months after they entered medical school" (8, p.80). This had the effect of minimizing the "exploration" of clinical science areas through electives. But the total time available for clinical electives was not appreciably changed.

The only major effect on the clinical portion of the curriculum, as a result of the conversion to the three-year program, was in the area of the timing of the career choice for the student. Because a substantial number of the three-year programs began in July with the basic science portion ending in the subsequent August or September, students were placed in a position of starting to plan their career choice a short time after starting their clerkships. Several clinical faculty stated that students were electing a certain sequence of clerkships to assist them more in making a determination of what they did not want than in a reinforcement of what they wanted. Many institutions demonstrated that students were making career choices, in order to enter the matching program, before they had finished their required clinical service rotations. In reality, in order to choose a particular sequence of clerkships, students were being forced to make decisions during their basic science years.

During the site visits, several institutions stated that at the beginning of their considerations to initiate the three-year program, they viewed the three-year program as facilitating curriculum flexibility. Experience has demonstrated that three-year programs have greatly inhibited curriculum flexibility. Flexibility was primarily lost in two areas. Since the program did not permit a summer vacation between the freshman and sophomore year, students who had academic difficulty in the disciplines typically offered in the first year were not provided an opportunity to remedy deficiencies. Secondly, if a student experienced academic difficulty during any portion of the disciplines typically offered in his/her first two years, the absence of any available block of free time resulted in the student dropping out for an entire year because of a single course deficiency. Also, the basic science curriculum was of sufficient intensity that it was almost impossible for faculty to provide concurrent remedial coursework during the academic year. In six institutions, concurrent remedial programs were arranged to permit students encountering academic difficulty the opportunity for make-up study. But the inclusion of an additional track required additional faculty and faculty time and thus, shifted some of the compression typically stated by students, to the faculty.

The general inflexibility of the three-year program was also felt in the areas of student attrition and minority student enrollment. Although the attrition rate from medical school in the study schools was less than 3%, the attrition from courses and disciplines approached 10%. For a variety of cultural, academic, and personal reasons, students experienced problems in "keeping up" with the pace established by the three-year program. Of particular concern to all institutions was the difficulty encountered with minority students. The increased rate of attrition for minority students from courses precipitated inappropriate feelings by the faculties regarding minority student programs. In five institutions, the initiation of special remedial tracks was effected as a result of the problems that minority students were encountering in the three-year program. Although the impetus was minority student related, non-minority students also participated in these programs.

One recurring complaint among the participating schools regarding a specific segment of the curriculum that was affected by the conversion to a three-year program was the scheduling of the physical diagnosis and/or the introduction to clinical medicine course. Whether the curriculum was organized along interdisciplinary or departmental lines, the clinical faculty felt that the quality of this course suffered in the compression and intensity of the preclinical science curriculum. Clinical professors expressed the view that continuous blocks of time were not available for the students to sufficiently learn skills for the administration of a physical examination and the taking of a patient history. One impressive example found to resolve this problem was encountered at one of the study schools. At the completion of the basic science curriculum, a six to eight week block of introduction to clinical medicine was introduced. This permitted concentrated time for learning prerequisite clinical skills, as well as a "decompression" from the basic sciences.

IMPACT ON FACULTY

The effects on the faculty as a result of participating in a three-year program occur in the support activities associated with the educational program, their research program and availability of vacation and/or personal free time.

Regardless of the extent of content revision, it was evident that the conversion to and operation of the three-year program required more committee work for the faculty. In those programs that undertook very little curriculum revision, the committee participation was less. It was necessary to conduct negotiations for changes in schedules, the adaptation or establishment of the evaluation system, and numerous other affairs concerned with the program change. In most institutions, faculty interacted with members of other disciplines more than they had in the four-year program. The interaction had no apparent advantage in the encouragement of other interdisciplinary efforts, i.e., research projects.

The faculty members in all categories of schools indicated a decrease in the availability of dedicated blocks of research time and the activities associated with their personal research programs. It is interesting to note that the department chairmen felt that the total amount of departmental research was essentially unchanged as a result of the conversion to and operation of the three-year program. There was a slight indication from chairmen that the quality of the departmental research had slightly decreased and this was supported by their faculties. Conversations with faculty members during site visits revealed little effect on the total time available for their research programs that could be directly attributed to participation in the three-year program, except the indication that committee work interrupted their laboratory time. A few factors were absent which, when present, assisted them in their research and faculty were found often to be reacting to these circumstances. As an example, the four-year program schedules permitted a free summer between the freshman and sophomore year which was utilized by many students to work in the research laboratories of the academic faculty. This not only provided a valuable research experience for the students, but also assisted the faculty member in the overall research plan of his or her laboratory. Secondly, the summer periods are typically free from instructional responsibility for most basic science faculty. Almost half of the institutions that conducted three-year programs started their educational program at the beginning of July rather than in September. Although the research time may have been provided later in the year, the normal absence (in four-year programs) of students from the basic science departments in the summer provided uninterrupted periods of laboratory work for the basic science faculty.

The subject of research project opportunities for medical students was of great concern to medical basic science faculty. Faculty in old schools expressed the view that the density of the educational program not only reduced the availability of time for interested students to pursue a brief research experience, but that it also reduced the student's incentive to undertake such experience. Those institutions with formal M.D. - Ph.D. programs stated that the pressures of the three-year undergraduate medical education program were showing their effects through the reduced interest of medical students to pursue the combined programs.

In several of the site visits, discussions with faculty on the subject of research elicited conversations regarding the "reputation" of institutions conducting three-year programs. Since this was mentioned by faculty at several schools, and in several disciplines, the remarks were more than just coincidence. As one old school basic science faculty member remarked regarding schools operating three-year programs, "We don't like the company we are keeping". Conversations and meetings with discipline colleagues at other institutions, and the opinions of the faculty member's discipline peers, were shown to contribute to the faculty's opposition noted in this study and others. The results of the AAMC report to the President's Biomedical Research Panel (9) demonstrates that there is no relationship between research involvement of an institution and the presence or absence of an accelerated program. The U.S. schools of medicine conducting required and optional (10% or more class enrollment) three-year programs (as described in this study) were checked against the research involvement quartiles used in the Biomedical Research Panel study. New schools were not included in this study. Eight schools were in the first and second quartiles and 10 schools in the lower two quartiles. Within the lower two quartiles, seven schools occupied a position in the fourth quartile. Thus, even though the distribution of these schools between the top and bottom is relatively even, there is a shift toward the lower quartile of the schools in the third and fourth quartiles. The distribution of the eight schools in the upper two quartiles is represented by three schools in the first and five schools in the second quartile.

In addition to the perceptions of the faculty about their unscheduled time, a constant complaint among the basic science faculty was the effect of the three-year program scheduling on their vacation period. Faculty members with children usually took their vacations in the summer months. If the program began the first of July, a rather "narrow window" was available for vacation. A few basic science chairmen indicated some difficulty with the scheduling of vacation time, but from the chairmen's point of view, this was not a major problem.

The clinical faculty's indication of increased curriculum affairs committee participation was most prevalent in those institutions that changed to an interdisciplinary curriculum. The organ systems approach in the preclinical sciences resulted in considerably more clinical faculty input to the basic science years. Also, the further expansion of the introduction to clinical medicine course into the basic science years resulted in additional clinical science faculty committee and instructional time. In those institutions conducting an interdisciplinary curriculum, the department of medicine was the major contributor of faculty to the preclinical science curriculum.

The clinical science faculty indicated a slight decrease in their time available for research which was a result of their increased involvement with the preclinical science curriculum. There was no indication by the clinical faculty of any effect on the quality or routine of their patient care activity due to participation in the three-year program.

IMPACT ON THE INSTITUTION

Among the objectives of this study was to examine the impact of conducting a three-year program on the institution's admissions process, overall operation and facilities utilization.

Student Admissions

As one would expect, the process and institutional standards for student admission did not change because of the change in length of the institution's educational program. In old and optional schools, the characteristics of students applying to these schools were not different from those who had applied and were accepted to the institution during four-year program operation. The percent of females accepted corresponded to the national average, but racial minority enrollment was increasing more rapidly. The 1970-1975 period also witnessed a substantial national increase in racial minority enrollment and the study schools provided no exception to the trend. In reviewing undergraduate GPA's and MCAT scores of entering students, a slight initial difference in MCAT scores of accepted students was noted between new and old schools.

In order to determine if the entering classes of three-year programs were distinguishable from the national character of entering students, the AAMC IPS data base was accessed. Figure 1 and Figure 2 show the trends in entering class average MCAT scores for study schools in the old and new school categories, as well as those for all 120 U.S. medical schools from 1972-73 to 1976-77. It is apparent from these figures that the average MCAT scores for entering classes in the old schools in the study were, in nearly all cases, equivalent or slightly higher than the overall average of the 120 U.S. medical schools. However, the MCAT scores of entering classes in the newly established three-year undergraduate medical schools were noticeably lower than the national profile on three of the four MCAT subtests. It seems most reasonable to assume, however, that the relative absence of an "established reputation" and the nature of new schools in their formative years is more influential in determining this difference than is the duration of the program. That being the case, one would have to conclude that, in terms of entering class MCAT scores, the characteristics of students entering three-year programs were essentially the same as those of four-year program classes.

Institutional Operation Variables

The examination of components of institutional operation influenced by three-year program operation is compounded by other factors, e.g., enrollment increases, changing nature of biomedical research funding,

Figure 1

Average Entering Class MCAT Scores (Science, General) for Old, New, and All Schools from 1972 -73 to 1976 - 77

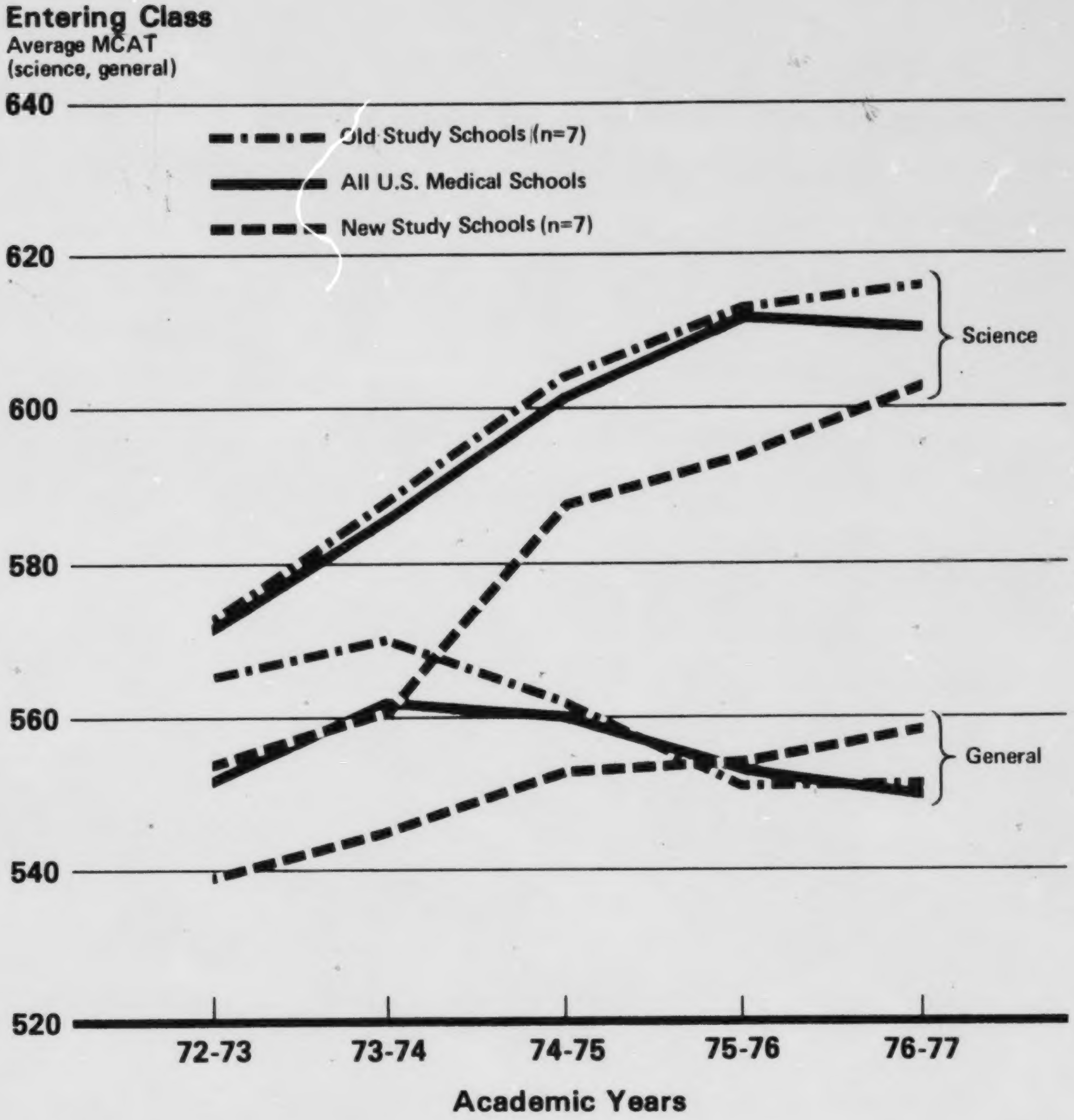

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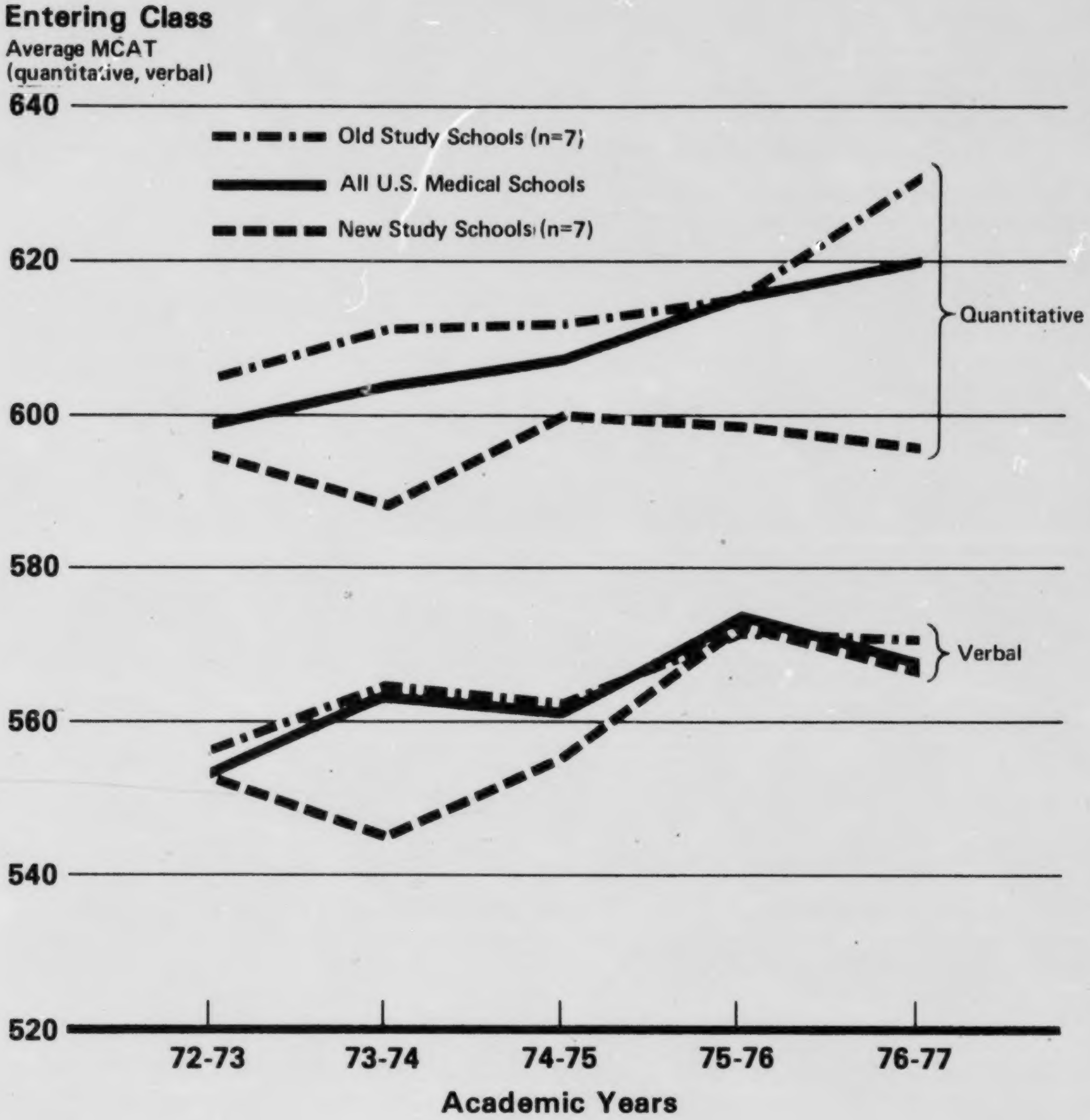
Figure 2

Average Entering Class MCAT Scores (Quantitative, Verbal) for Old, New, and All Schools from 1972 - 73 to 1976 - 77



special projects grant activity, and response to the increasing institutional cost of education generally. However, in spite of these influences, efforts were made to select a sample of four-year schools of medicine in order to provide a basis for comparison with study schools regarding several general institutional variables. Through the AAMC IPS data base, a capability was available to establish a group of "control" schools for purposes of comparison. This capability essentially allows the selection of a set of IPS variables for a given school, and on a multidimensional level, a listing of other schools in terms of their similarity to the selected school considering all of the identified variables simultaneously. The variables on which similarity was examined were:

- Total tuition and fee revenues
- Expenditures for sponsored teaching/training
- Expenditures for sponsored research
- Total expenditures (all sources)
- Total revenues (all sources)
- State appropriations revenues (state supported schools *only*)
- Total medical student enrollment
- Other student enrollment - medical student equivalents
- Total basic science faculty
- Total full-time clinical faculty

These variables for the 1969-70 academic year were examined for each of the old category study schools. For *each* study school, the *four most similar* four-year schools were selected as "control" schools. This process was followed for each of the seven "old" study schools which were in operation in 1960-61. One of the study schools did not yield "control" schools of sufficient similarity and hence, was not included in the analysis. The process resulted in six study schools, each with four similar "control" schools for a total of 24 "control" schools.

The data and figures which follow are based upon these six study schools and their comparable 24 control schools. These data are presented to demonstrate the trends over the period of time examined in the study. The absolute values shown in the figures are not as important as the trends or rates of change of the variables for the study and control school groups. It should further be mentioned that, although the similarity analysis function of the IPS data base attempts to match schools on all variables simultaneously, it is quite impossible to obtain "perfect" control schools. In examining the results of this selection procedure, it was apparent that control schools still varied from the matching study school on a number of variables. This fact further emphasizes the need for caution against a strict adherence to the absolute values in the data which follow. Additionally, since there were alternative ways in which schools could categorize certain revenues and expenditures, not all schools followed the same methods of allocating certain special projects funds. It is therefore somewhat misleading to make strict comparisons. New and optional schools were not included in the analysis. Once the "control" schools were selected, data was retrieved from the IPS data base for both the study schools and the related control schools on the following variables over the period 1970 to 1976:

- Total medical student enrollment
- Tuition/fee revenues
- Number of basic science faculty
- Number of clinical science faculty
- Total revenues
- Expenditures for sponsored teaching/training
- Expenditures for sponsored research
- State appropriation for public schools

The graphs in Figures 3 to 10 represent the trends for each of these variables for both study and control schools. In Figure 3, it is apparent that except for more fluctuation for study schools, the trends in enrollment increases were relatively parallel from 1969-70 to 1975-76 for study and related control schools. Although the study schools showed a slightly higher (8-13%) average school enrollment, this existed prior to the adoption of the three-year program and, hence, cannot be attributed to the conversion to the three-year program. The prominent fluctuations in 1972-73 and 1974-75 for study schools reflect variations of only one or two schools rather than general trends of all study schools and should therefore not be interpreted strictly as applying to all study schools.

The decrease in 1975-76 in study school average enrollment, however, did apply more generally to all six study schools. Other than these fluctuations, however, there is no great difference in the rate of enrollment increase for the study schools.

The differences seen in general enrollment are also reflected in Figure 4 which shows the average tuition/fee revenues per institution.

Figure 3

Average Total Medical Student Enrollment for Study & Control Schools from 1969 - 70 to 1976 - 77

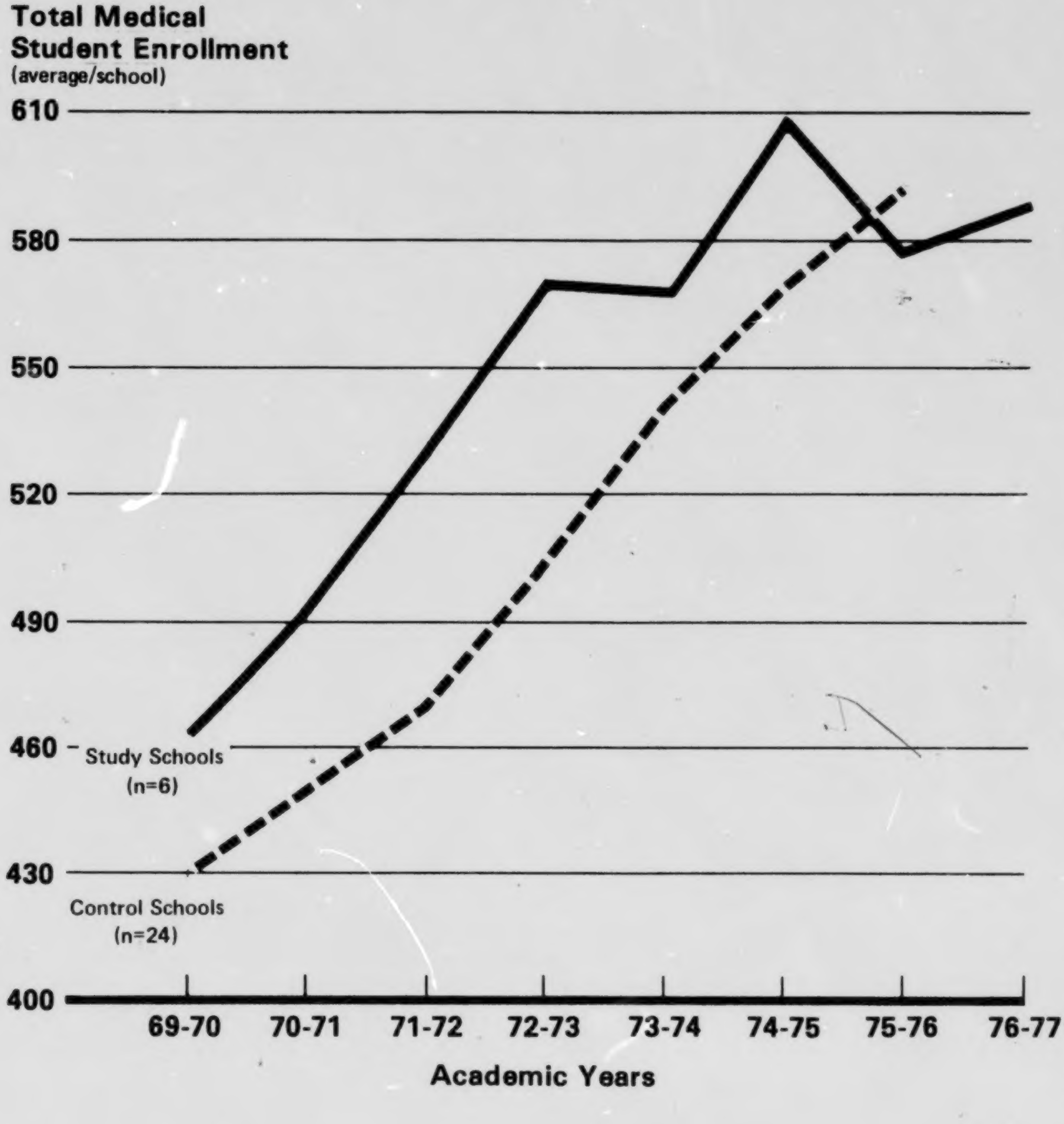


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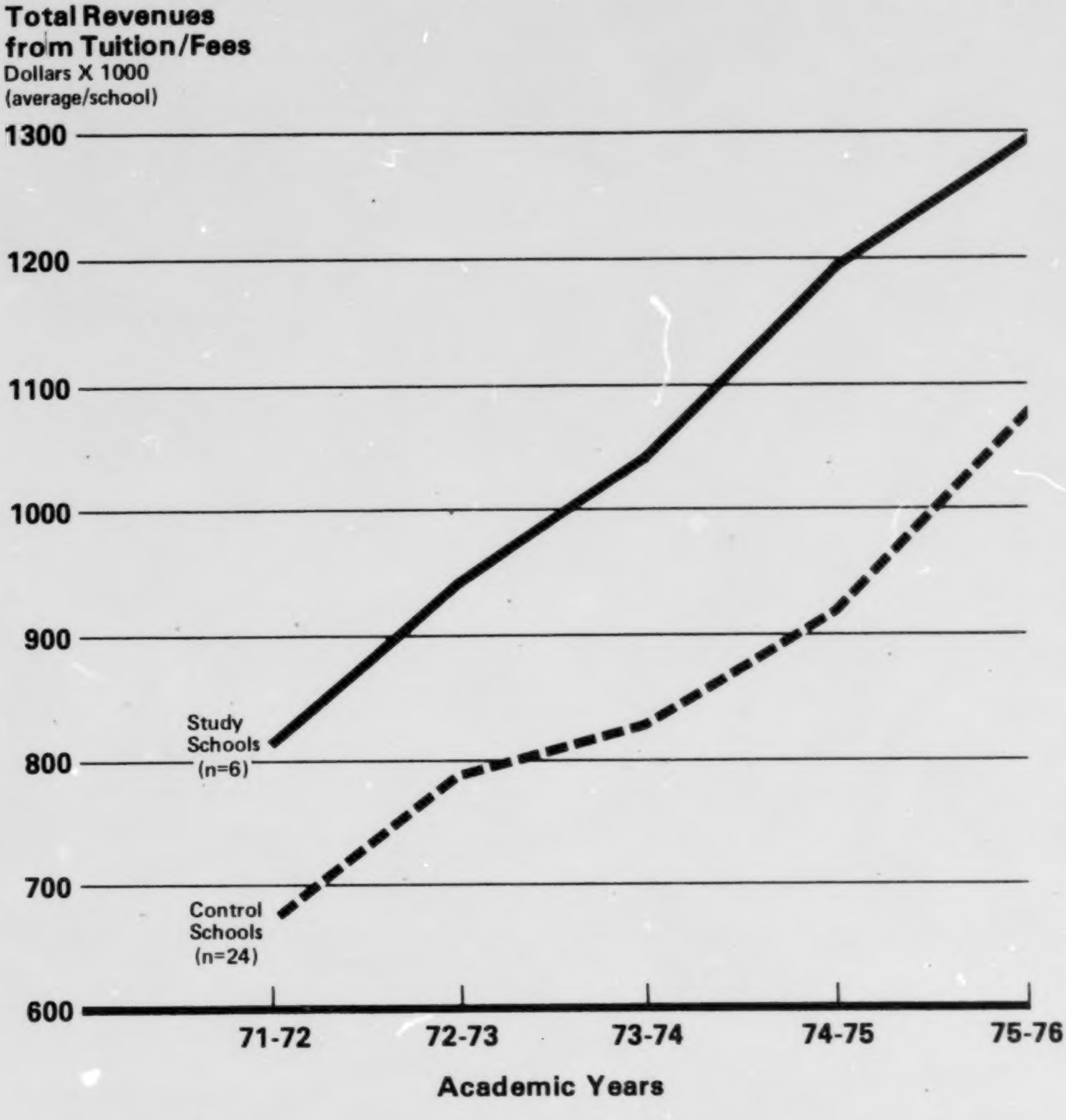
Figure 4

Average Tuition/Fee Revenues per School for Study & Control Schools from 1971 - 72 to 1975 - 76



Although, in absolute terms, study schools' revenues from tuition/fees average about 27% more than that for control schools, the rate of increase is approximately the same during that period of time. However, these data were not available from the data base prior to 1971-72. The reason for the decrease in enrollment in 1975-76 not being reflected in the revenues from tuition/fees lies in the fact that four of the six study schools had a tuition/fee increase in 1975-76 which tended to mask the effect of decreased total enrollment.

Figures 5 and 6 show the level and growth in average numbers of basic science and clinical faculty within the two groups of institutions. Again, with the exception of several noticeable fluctuations which are the result of large increases in only two of the study schools, the rate of increase in numbers of faculty is essentially the same for control and study schools. The two schools which did increase greatly in 1972-73, decreased again the following year.

In terms of total revenues for the study schools compared to the control schools (Figure 7), there were virtually no differences between the two groups during the study period. As of 1975-76, however, it appears that the control schools maintained their trend while study schools fell somewhat below. To some extent, this difference appears to be due to the reduction or disappearance of the funding in special projects to the study schools. Figure 8 shows the trend in expenditures for both groups in the area of sponsored teaching/training. This category includes all special projects awards as well as some aspects of capitation. The category also includes special awards and capitation

Figure 5

Average Number of Basic Science Faculty per School for Study & Control Schools from 1969 - 70 to 1975 - 76

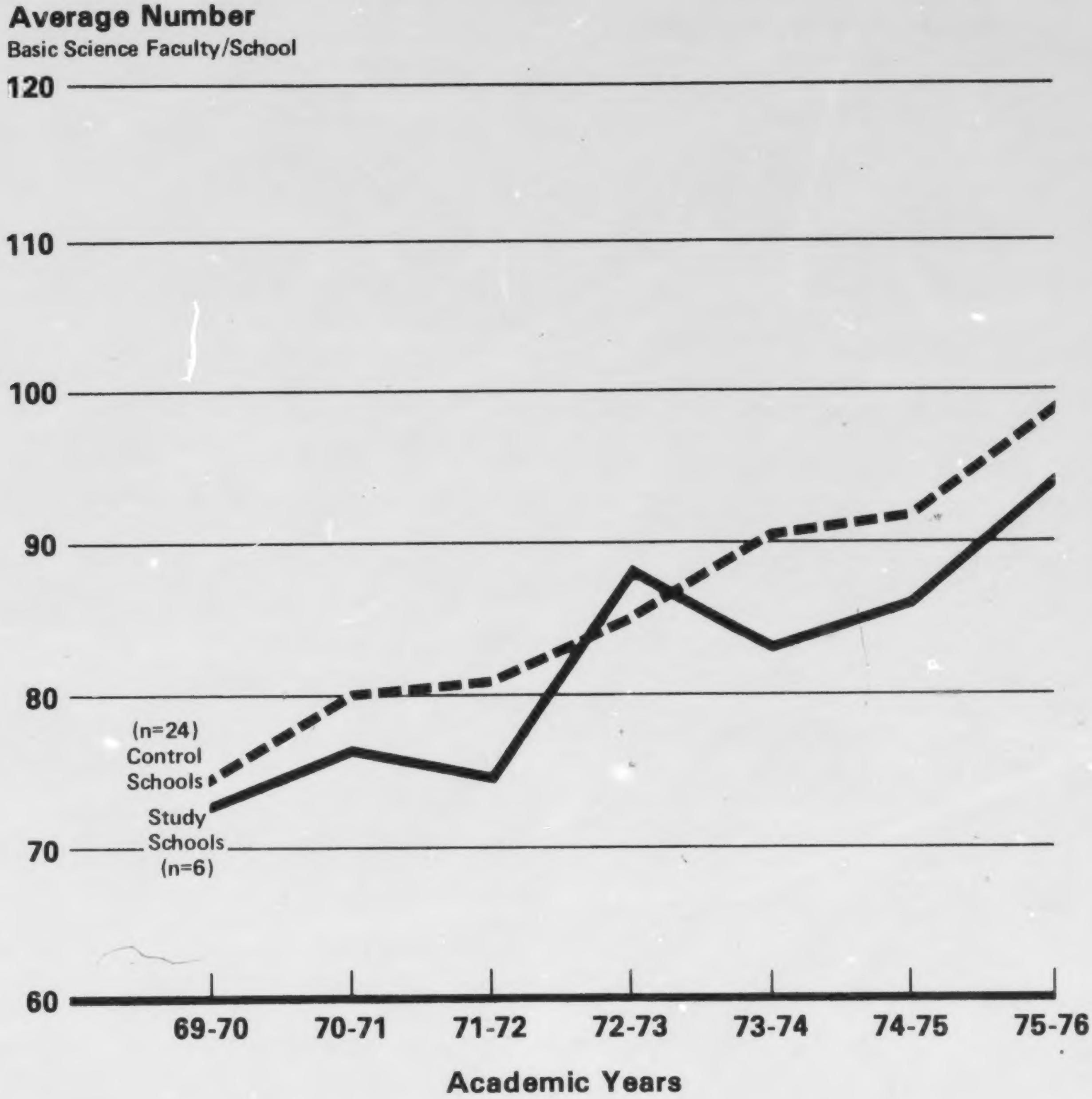


Figure 6

Average Number of Clinical Science Faculty per School for Study & Control Schools from 1969 - 70 to 1975 - 76

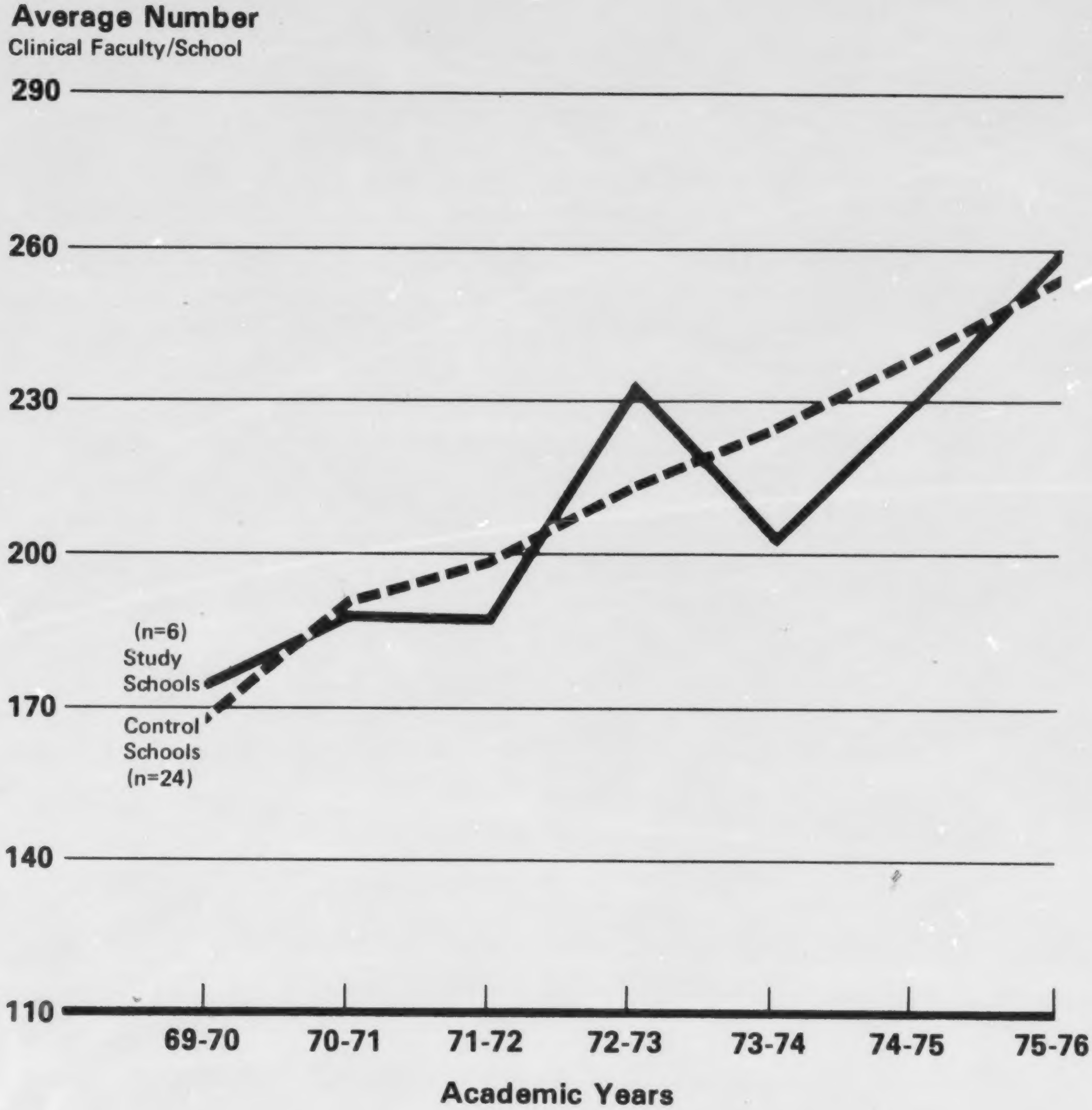


Figure 7

Average Total Revenues (All Sources)
for Study & Control Schools from 1969 - 70 to 1975 - 76

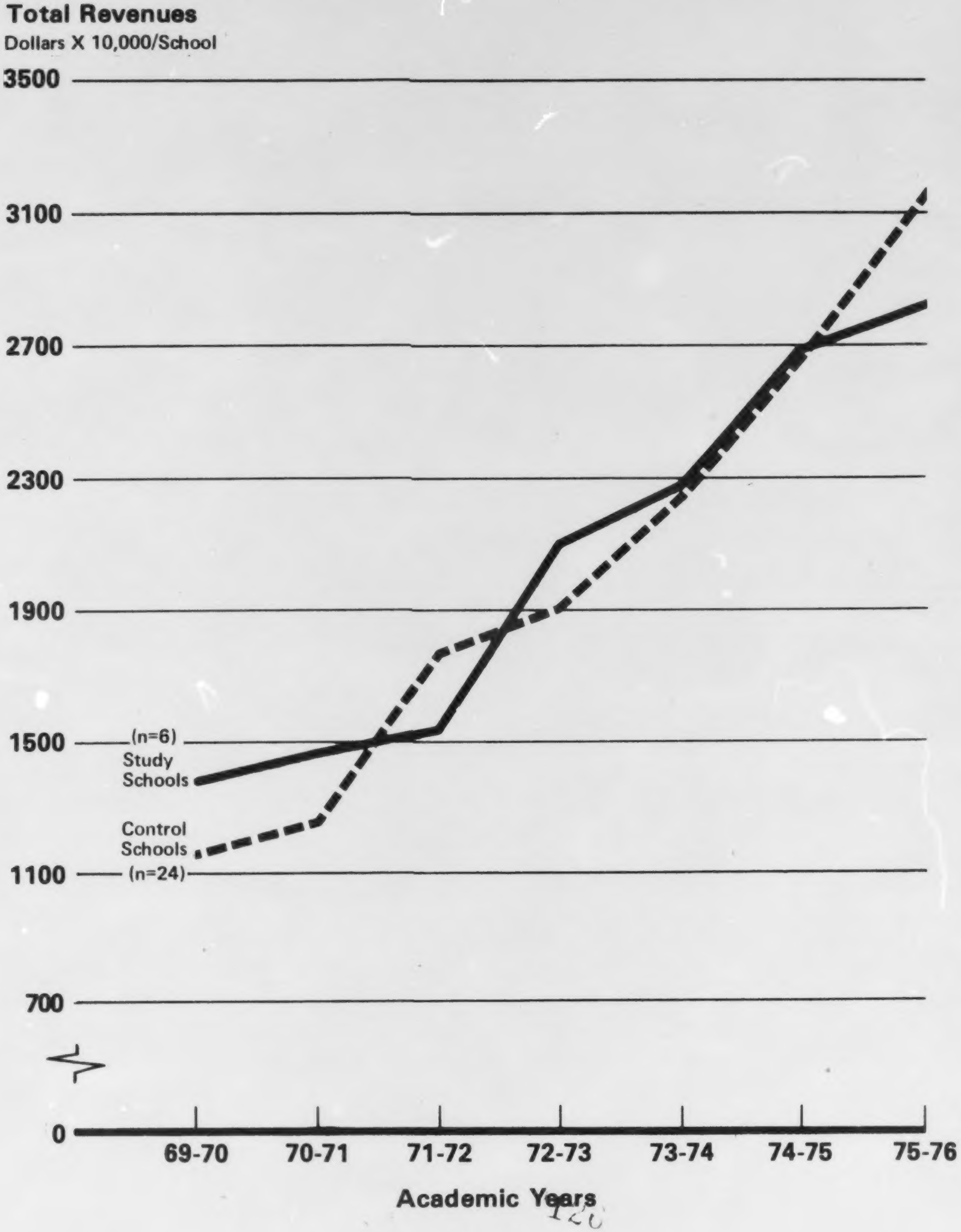
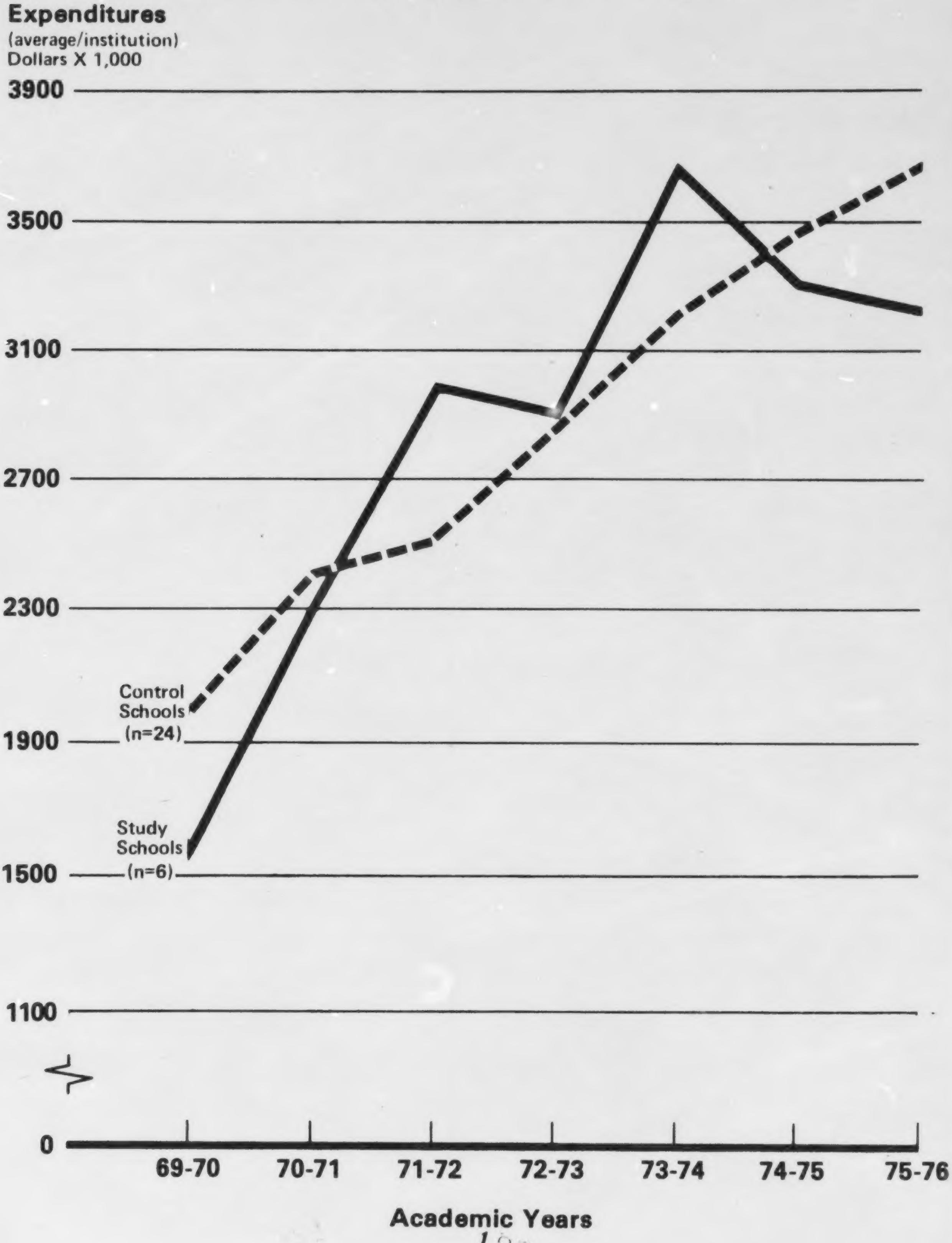


Figure 8

Average Expenditures for Sponsored Teaching/Training per School for Study & Control Schools from 1969 - 70 to 1975 - 76



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from state governments as well as other non-government sources. The two noticeable peaks in 1971-72 and 1973-74 are primarily attributable to two of the six study schools. In addition, these peaks are not reflected in the federal funding levels for these schools and must therefore be from state or non-government sources to which the project staff did not have access. Therefore, caution must be exercised in interpreting these data. The decrease in sponsored teaching/training funds to study schools in 1974-75 coincides with the period when five of the six study schools experienced a considerable reduction or termination in federal special projects funds for enrollment increase and/or program shortening.

Figure 9 shows the trend in expenditures for sponsored research from 1969-70 to 1975-76. It is apparent from this figure that, although both study and control schools were increasing in sponsored research expenditures, the overall rate of increase for study schools was somewhat less than that for the related control schools, especially from 1973-74 to 1975-76. An additional trend is seen in Figure 10 which indicates the apparent increase in reliance on state appropriations by the study schools compared to the four-year institutions.

The general impact, therefore, upon the institutions conducting three-year programs during this period was one of change in the financial character of the institution rather than reduction or increase. With the changing federal emphasis, on special projects funds, the participating institutions were faced with the problem of altering this financial character to meet the financial needs of the institution.

Figure 9

Average Expenditures for Sponsored Research per School for Study & Control Schools from 1969 - 70 to 1975 - 76

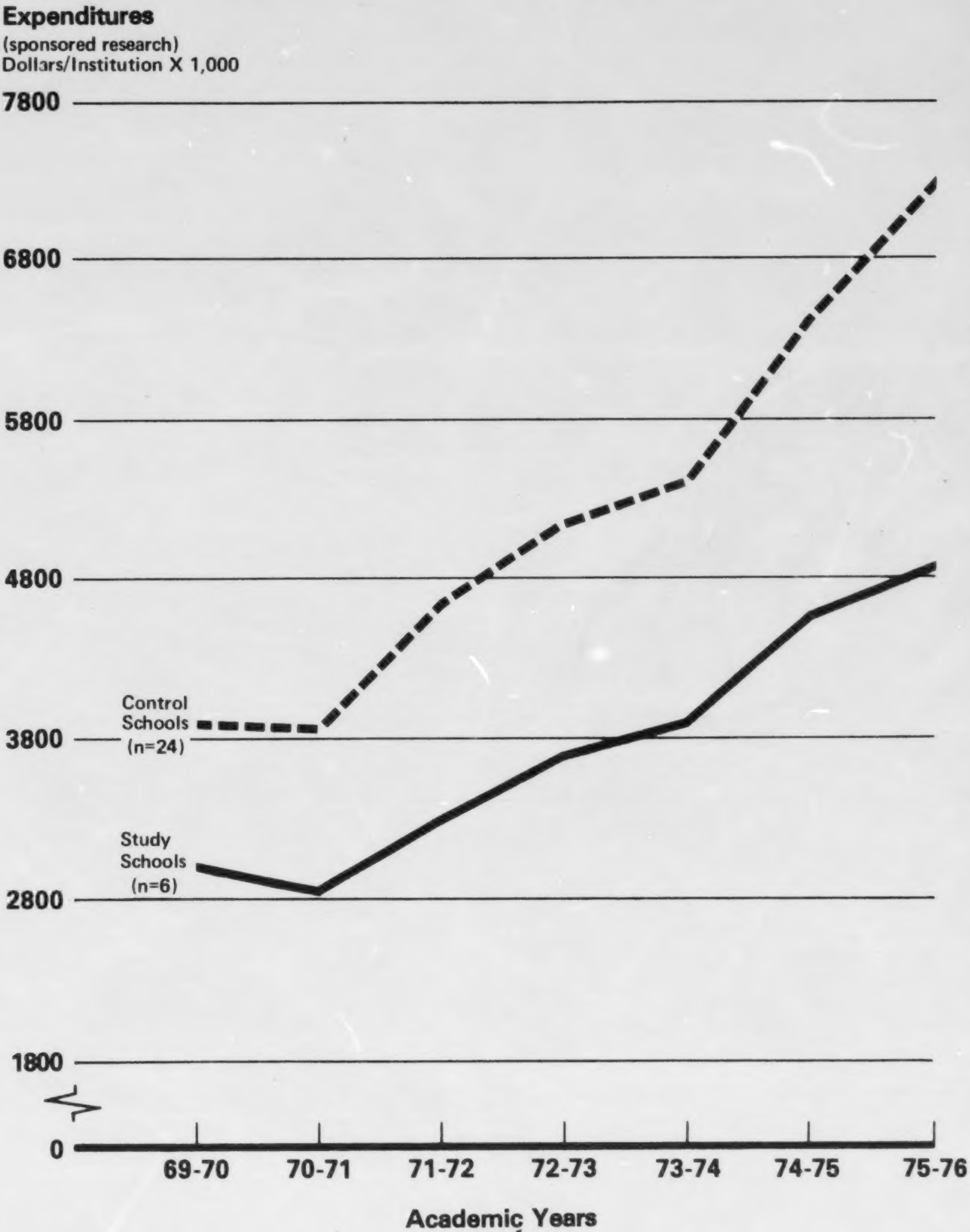

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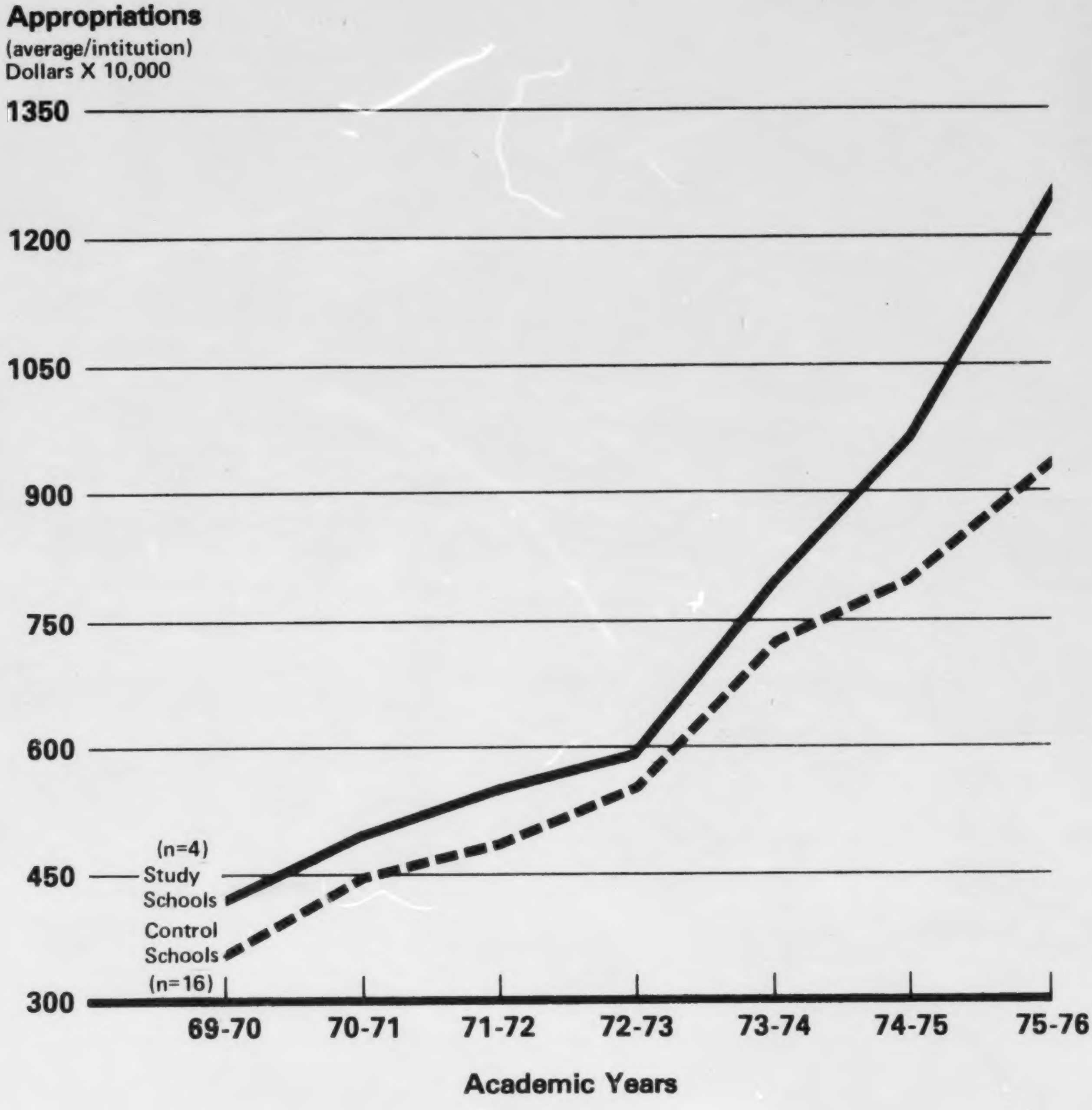
Figure 10

Average State Appropriation for Public Study & Control Schools from 1969 - 70 to 1975 - 76



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Impact on Facilities Utilization

A long established and constant concern in medical education is that of facilities and their utilization. Indeed, a frequent advantage cited by many of the initial proponents of shortened medical programs was one of more effective and efficient utilization of facilities. The concept of having students in the laboratories and lecture halls 12 months a year appeared to be a definite advantage of initiating a three-year program. And, in fact, respondents to the study questionnaire did indicate some increase in the effectiveness with which student lecture/classroom space was utilized in three-year programs. However, in discussions during the site visits, it was frequently pointed out that utilization of facilities and space was only more effective in new three-year programs.

Facilities and space utilization occurs at three levels; faculty office and research space, student classroom and laboratory space, and clinical facilities. Old established institutions start with an already existing physical plant and develop utilization patterns for the available space. New schools have the opportunity to design facilities which will afford maximum utilization. In fact, of the study schools, new schools made more use of interdisciplinary laboratory space than the rest of the cohort. If there is any effect on the educational program on the total physical plant, it will be in the area of classroom/laboratory space and clinical facilities. We were unable to assess any increase in the efficiency of space utilization in existing facilities as a result of operating a three-year program, except in the use of multidisciplinary laboratories in several schools.

Additionally, in efforts to increase enrollment, the primary barrier has been available facilities and space. Regardless of the duration of an undergraduate medical education program, laboratories and classrooms cannot be utilized when the disciplines for which they are designed are not being taught. This is somewhat less the case for multidisciplinary facilities which can accommodate students in many segments of the curriculum. In the clinical phase of undergraduate medical education, upper limits exist regarding the number of students which can be accommodated by virtue of number of beds, number of patients, and number of teaching faculty. The basic sciences are affected somewhat differently than the clinical sciences, although both are restricted in the absolute number of individuals which a facility will hold. Several schools in this study expressed a concern that, because of limited clinical facilities, they could not move easily from a three-year program to a four-year program. Likewise, the recommendation from the Carnegie Commission report that schools increase enrollment by one-third in the three-year program in order to maintain the same total enrollment as the four-year program simply could not be accommodated by most schools in this study. The new schools were more able to plan facilities for these recommended changes but, nevertheless, only drastic alteration of the curriculum could alter the inherent limits on space and facilities. It was clear that shifting patterns of space utilization occurred in the study schools, but the utilization of facilities was based as much on curriculum characteristics as on program duration.

IMPACT ON STUDENT AND STUDENT PERFORMANCE

Student Finances

The subject of the savings of education costs for a student graduating from a three-year program when compared to a four-year program student has received considerable attention. As indicated previously, the student cost factor was one of the major positive influences when establishing a three-year program in newly developing medical schools. The potential for cost savings is in either the area of tuition and fees or daily living expenses.

In all but two of the study schools, total student tuition was the same for the four-year and the three-year program. Those institutions conducting their education program on a semester basis made adjustments to increase the student tuition to accommodate the shorter period of education. For institutions conducting their academic affairs on a quarterly basis, adjustments were not necessary because the summer periods were simply an additional quarter. Two of the institutions, for at least one of their three-year classes, maintained the same fee schedule which was used in the four-year program. Thus, students at those institutions in comparison to their colleagues enrolled in the previous four-year program realized a savings in student tuition.

The savings to a student enrolled in a three-year program is in the area of living expense. If the two free summers that existed in the four-year program between the baccalaureate degree and the granting of the M.D. are eliminated, the student is encountered with 36 consecutive months of living expenses. For unmarried students in four-year programs who returned home during the freshman-sophomore summer, the difference in living expenses between the two programs is six months. Married students in four-year programs usually established residence in September of their freshman year and remained in the geographical area of the medical school until graduation 45 months later. In this circumstance, a difference of nine months exists when compared to the three-year program students.

Earlier in this report, reference was made to the reduction in the loss of foregone earnings for the student graduating from a three-year program (2). We view this issue as being totally unrelated to the cost of undergraduate medical education. The entry into graduate medical education one year earlier benefits the student's cash flow, but should not be, in any way, associated with the principle of reducing the cost of undergraduate medical education. The loss in potential earnings of a medical student which is related to the offsetting of education expenses occurs in the available summers during the study of medicine. Students in three-year programs, when compared to four-year program students, lose the ability to work during the post-baccalaureate and freshman-sophomore summer periods.

Student Evaluation - Undergraduate Medical Education Program

Several studies have appeared concerning the performance of students in or graduating from three-year programs. Garrard and Weber reported that essentially no differences existed in performance between three- and four-year program students when early graduation is based on self selection (10). Hallock, et.al. indicated that during clinical clerkship training, there was little difference in the performance of students who had one or two years of preclinical preparation (11). Dinham and Barbee, in a study involving a comparison of medical knowledge and clinical performance measured one year after graduation, found that neither service chief ratings nor NBME Part III scores differed between three- and four-year program graduates (12). Also, Page and Boulger, in a survey of deans conducted in 1973, found that 96% of the respondents reported that no discernible differences between three- and four-year program graduates was apparent (13). Finally, Hoffman, in a survey of 12 schools, stated that when schools compared objective data of three- and four-year program students, cognitive knowledge and skills were comparable (14). During the formulation of the study design, extensive deliberations were conducted on the issue of comparing the academic performance of students in three-year programs with those studying in four-year programs. Initial thoughts were to compare the results of performance measures utilized during operation of the four-year program with results from these same measures when administered to three-year program students. Preliminary contacts with institutional representatives found this to be an extremely difficult and inappropriate task. Due to the variability in the content of institutional examinations from one year to the next, and the impracticality of designing a study to "fit the data", the idea was abandoned. Furthermore, within those institutions that had conducted four-year programs and subsequently converted to the three-year program, the content and its sequence had changed sufficiently to make direct comparisons highly questionable. It was also apparent that comparisons of any differences in student performance between the two programs could not be solely attributable to the change in program duration. Finally, in the areas requiring a greater degree of subjective evaluation, the retrospective character of this study introduced a bias, which, depending on intervening events, was either strengthened or weakened.

Consideration was also given to comparing the performance on Parts I and II of the National Board of Medical Examiners for students in both the three- and four-year programs within the same institution. As indicated earlier in this report, the circumstances pertaining to the institutional requirements for the taking of the National Boards, particularly Part I, have considerable influence on the motivation students have when preparing for this examination. In fully 60% of the institutions comprising this study, the "rules" for taking the National Boards changed. The provision of an option to take the Boards was often replaced by a requirement. If the requirement was further reinforced by the recording of scores for use in the promotion process, an additional variable was introduced.

The intensity of faculty concern about student performance differences occurred in the year of transition from a four-year to a three-year program. This was particularly evident when both three- and four-year program students were in the same clinical clerkships. The "tradition" of the four-year program exerted its bias more in this environment than in any later clinical experience with three-year program students. It was pointed out in several site visits that, within the first clinical year after several clerkships, clinical faculty could not distinguish the three-year students from their four-year program colleagues.

The project staff relied on the institutional representative for the overall interpretation of student performance data. Also during the site visits, the project staff requested opinions from all levels of the faculty regarding their impressions of differences they observed in the academic performance of students in three- and four-year programs. An overwhelming number of faculty felt that although they had the feeling that three-year students were not as well prepared, the results of internal examinations did not demonstrate any measurable differences when compared with performance of the four-year program students. The performance on the National Boards, except in some cases at the year of transition, were comparable. In fact, in several institutions, performance in some disciplines improved.

Instances when National Board scores were lower in the three-year program were again chiefly evident during the year of transition. Several faculties became extremely concerned when the National Board performance on Part I dropped in the first year of operation of the three-year program. Since admissions requirements and standards did not change in any of the institutions, the decrease in scores was attributed to the three-year program. On further investigation, it was often found that new scheduling had caused omissions in subject areas or the timing of the program did not coincide with the administration of the National Boards. In succeeding years, scores gradually increased and, in a number of institutions, surpassed the levels that were achieved during the operation of a four-year program.

The relationship of the medical basic science year to the administration of Part I of the National Boards became an important consideration in schools where the exam was required. As noted earlier, several institutions entered their first year students in July in order to complete the basic science portion of the curriculum 15 to 16 months later and thus, enable students to take Part I of the National Boards immediately upon completion of the traditional second year sciences. Students enrolled in institutions that retained 18 months in their preclinical science programs were finishing their basic sciences several months after the fall NBME administration. These students were required to wait until the following June to take Part I of the National Boards and thus, their performance was affected. Many schools reacted by exerting strong efforts to synchronize their school calendars to coincide with the administration of Part I of the National Boards.

An additional concern of the medical schools is one of licensure of their graduates. One objective of the present study was to examine the statutes and regulations regarding physician licensure in each state to determine the impact, if any, of curriculum shortening upon the ability to be licensed to practice medicine. Data from the Division of Associated Health Professions, Bureau of Health Manpower, was provided for the project staff's perusal regarding requirements for licensing in each state. Our examination revealed only two potential areas of difficulty. One state requires a minimum of 35 months residence in the medical school in order to qualify for licensure in that state. In an institution conducting a shortened (three-year) program where entering classes begin in September and graduate prior to August of the third year, the student is enrolled for less than 35 months. Schools of medicine in this state were required to adapt their program to matriculate students in July or August in order to meet the 35 month requirement. The state requirement was later altered to require 35 months or its equivalent for licensure.

An additional state frames their requirement in terms of hours in the specific academic disciplines, as well as a minimum time in an undergraduate medical education program. Again, institutions in this state adapted their shortened program to meet the minimum requirements. However, there were some personal experiences related to the project staff where a graduate had to extend (e.g., two month externship) the training period in order to apply for licensure in this state.

By and large, state requirements and their interpretation were not a barrier to the three-year program since the various state medical boards reserved the right to make final decisions regarding an applicant's qualification and acquisition of minimum requirements. The two instances discussed above, however, do represent potential areas of difficulty in the licensing of graduates from accelerated or shortened programs in those particular states.

During site visits, when faculty were approached with the question of student performance, faculty made reference continually to their concern for the "learning style" of the student. They felt that the overall density of the curriculum contributed to a gradual erosion of student motivation and the development of unfavorable learning habits. It was their opinion that students were constantly "under fire" with lectures and responsibilities for content which provided no time to either read independently within an area of interest or pursue an outside activity. Reference has already been made in this report to the subject of the student's increased dependence on hand-out materials as the primary source of didactic material.

Student Evaluation - Graduate Medical Education Program Directors

The responses from the graduate medical education program directors have considerable impact on the students' perceptions of their own quality and the medical school's attitudes about its graduates. The subjective evaluation of medical school graduates by those responsible for their graduate training reveals that generally they are not as satisfied with three-year program graduates as they are with those students graduating from four-year programs. When asked if they felt that three-year program graduates were as competitive for their own, as well as other positions, the response clearly demonstrated a bias in the PGY-1 selection process. Opinions such as: three-year program graduates are not as mature, do not have as much clinical experience, and do not have as much in-depth knowledge as four-year program graduates emerged from their responses. On the other hand, over 50% of the respondents indicated that "whatever" these students lost in their three-year undergraduate program could be regained easily in their residence training. The responses provided by program directors are basically couched in what they consider the student's maturity. Conferences with clinical faculty revealed that maturity is mainly translated into the students' ability to assume responsibility upon entrance to their first year of residency training.

The assumption of responsibility issue was frequently reinforced in conversations with program directors within the three-year program institutions. Although responses to the study school questionnaire were not as "harsh" on three-year program graduates as those of their colleagues in non-university based hospitals, they were emphatic about the three-year student's deficit (compared to four-year students) in ability to assume responsibility. A clear example was provided by one program director. Each year the director must fill six first year positions and he stated he could never fill all positions with three-year program graduates. He further stated that he would choose not more than three graduates from three-year programs. If he filled all six positions with three-year program graduates he indicated his service would be "chaos" for approximately six months. The balance of the four- and three-year program graduates in these six positions permits his three-year program graduates to "come up to the level" of those graduating from four-year programs. He stated that after the passing of six months, there was virtually no difference between these two groups of students. Although this example represents a single case, similar comments were heard in all the schools visited in this study.

The effect of the bias against three-year program students cannot be gleaned from NRMP data on which choice of the student was matched. Students who perceive a bias during their interviews and exploration of possible positions will not indicate these programs as their first choice. In fact, three institutions in the current study stated that students had returned from the interviews and expressed to their clinical faculty that a program director specifically mentioned that he/she would not accept three-year program graduates into their program. Thus, it is inappropriate to extrapolate from the frequency of first choice data that a high frequency of first choices means the absence of bias.

Strong sentiment was expressed by clinical faculty that students graduating from three-year programs were choosing a more general first year of post-graduate training and subsequently, at the completion of their PGY-1, changed to other specialties. Attempts to obtain accurate data from institutions regarding the patterns of choice of categorical and flexible first year training positions and their attrition at the completion of the PGY-1 year yielded incomplete results and is, therefore, not included in this report.

The responses of program directors about the national pool of three-year program graduates may lead to erroneous assumptions. The question of their assessment of all three-year program graduates was not institution specific. The reputation of a medical school and/or departments within a school with a certain number of programs continues whether the medical school is on a three-year or a four-year program. But the existence of a bias could have implication on the "expansion" of the school's graduates into other programs. Furthermore, the competition for available PGY-1 positions is generally increasing as the pool of graduates approaches the total number of available positions and thus, the effect of bias could be more consequential. Of interest is the response from program directors regarding the issue of the existence of less information on which to judge the quality of a three-year program graduate. The same response pattern was observed in the study schools. This is not attributable to three-year programs, but to the prevalence of pass-fail grading systems.

In summary, the responses from program directors point to a definite bias toward three-year program graduates when compared to graduates of four-year programs. This bias does not appear to have a measurable objective base, but the important fact remains that indeed, the bias exists.

IMPACT ON THE NATIONAL HEALTH MANPOWER POOL

During the period of 1970-75, the size of medical school entering classes increased 35% from 11,300 in 1970 to 15,300 in 1975 (5). The general increase, precipitated in large part by the response of medical schools to enrollment increase incentives in the 1971 legislation, exceeded the projection of the 1970 Carnegie Commission's report (5). Although a one time increase in graduates occurred as a result of the initiation of three-year programs, it is clear that without simultaneous enrollment increases in the nation's schools of medicine, the long term effects on increasing physician supply through the initiation of three-year programs would have been minimal. The effect of the introduction of three-year programs in U.S. schools of medicine on the national health manpower pool can be viewed from two perspectives: the increase in the total size of the pool and the rapidity at which the pool is enlarged.

The increase in the total number of graduating M.D.'s due to the starting of a three-year program will occur only once. The one time increase will occur when the first three-year program class in each institution graduates simultaneously with the last four-year program class. The potential one time increase was examined by calculating the total number enrolled in the first three-year program class of each institution with a required and optional three-year program as defined in this study (Table 6).

The total first class enrollment was 2,438 students, Of these 2,438 students, 325 were enrolled in the charter class of new institutions.

Thus, in one respect, the three-year program effort in this country resulted in the potential graduation of 2,438 additional physicians than would have normally occurred if all institutions had remained on a four-year program. Three-year programs in U.S. medical schools were started between 1970 and 1973. Table 6 indicates that the largest percent of the national entering class enrollment occurred in 1972 when nine percent of all students entering U.S. medical schools were enrolled in the initial classes of institutions enrolling their first three-year program class.

Table 6

Total First Class Enrollment of Institutions
Starting Three-year Programs in U.S. Medical Schools

Year	Total Number of Entering Students in Institution's First Program	Percent of Total Entering Class for U.S. Medical Schools
1970	604	5.4
1971	390	3.2
1972	1,205	9.0
1973	239	1.7

In the 1970 Carnegie Commission Report (2), mention is made that the initiation of three-year programs would more rapidly increase the health manpower pool. This concept is not to be confused with an

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increase in the number of graduating M.D.'s, but simply a method to accelerate the solution of an apparent problem. Thus, beyond the initial 2,438 "extra" students from first classes, further implications for the health manpower pool resulting from the conduct of three-year programs reside in issues of time of entry to graduate training. The enrollment in three-year programs between the years 1970 and 1973 was 6,321 students. The total number of graduates from these four entering classes (1970 to 1973) was 5,224 students or 82.6% of the entrants. The 17% attrition can be compared with total attrition for all accelerated programs, i.e., six-year programs, of 8%. The national enrollment of all accelerated programs in the country between 1970 and 1973 was 6,464 while 5,964 graduated in 34 to 36 months. The attrition in the three-year program was accounted for, almost exclusively, by students extending their time of study and institutions converting back to four-year programs. Since 1973 was the "peak year" for three-year program enrollment, it is now evident that the percent of three-year program graduates will continue to diminish.

One of the bases of the recommendation by the 1970 Carnegie Commission was not only to have institutions accelerate their programs, but in order to maintain total institutional enrollment, increase each class of the three-year program by one-third. The enrollment increases recognized by the schools that conducted three-year programs never approached a one-third increase. It is also clear that the 2,438 extra enrollees in first classes of three-year programs produced a bolus of extra graduates that, in all probability, could not have occurred under normal enrollment increase procedures.

The return, or conversion in the case of new schools, to the four-year program has further implications for the size of the national health manpower pool. In the absence of enrollment increases, the impact of the "extra" group of graduating M.D.'s from the first classes of three-year programs would be totally lost. But subsequent enrollment increases, particularly in new schools, has offset the loss that would have occurred by the return to the four-year program and the absence or reduction of a graduating class. Between the acceptance of transfer students, two year school graduates, and increasing enrollment, the impact of the loss of graduates into the total physician pool through return to the four-year program has been diminished. But, it is certain that the conversion to four-year programs by institutions formerly conducting three-year programs lessened the significance of the one time increase. At least three schools, on the conversion to a four-year program, will actually experience a year without graduates.

RETURN TO THE FOUR-YEAR PROGRAM

Throughout this report, frequent reference has been made to the implications of the process of educational program development and operation on its "staying power". It has often been said that educational program experiments never fail because benefits are always derived from the experience. It is also worth considering that the experiments never fail because we do not know if they succeed.

The movement to the three-year program was in the absence of objective data or documented experience. It is equally true that subjective data formed the basis of return to the four-year program. Due to the malleability of students and the educational program, this is not an unusual phenomenon. The clear implication is the need for research constructs to document and assess the factors in the educational program which have long term effects on the student, faculty, and institution. This requires longitudinal studies of each of these groups to distinguish if, indeed, program duration relates to anything other than tradition.

Numerous reasons for the return to the four-year program have been stated throughout this report. The results of this study support other studies which indicate that one of the causes for the demise of the three-year program was faculty opposition. But it is also very clear that several phenomena have contributed to and, in some instances, caused the opposition of the faculty and administrators. At the outset, faculty and school administration generally were not in agreement with the concept that a method to increase physician manpower was to initiate a three-year program. As indicated in this report, there was general agreement with addressing the concept of shortening the time between the entrance of undergraduate college and the granting of the M.D. degree. But the discrepancy between the concept of the three-year program and other accelerated programs as a means of increasing the health manpower pool and the eventual realization that it was only a one time increase did not assist in generating faculty confidence.

The credibility of the accelerated program concept suffered immeasurably from this confusion.

On the other hand, the Congress is aware that oftentimes the only means of "moving" an educational system is to push it farther than it wants to go. The incentives in the health manpower legislation of 1971 were not mandatory and were not tied to the bonuses which existed for enrollment increases. But when the financial base of an institution is eroding, the possibility of acquiring additional funds becomes a necessity. It is extremely important to remember that new schools in this study did not possess the level of anxiety concerning three-year programs that was present in old schools. But it is also apparent that new schools were grasping for as many sources of income as possible to "keep the ship afloat".

Since most schools have now returned to the four-year programs, the mechanism by which this action has occurred is important. The bolus of the physician manpower increase caused by the initiation of three-year programs has, to some degree, been lost by the return to the four-year program. In order to maintain total institutional enrollment, the majority of institutions that returned to the four-year program, particularly those with large enrollment, phased their reentry into the four-year program over a two year period. Thus, half of the entering class would either opt or be assigned to a four-year program and the other half to a three-year program. This still resulted in a reduction of students in two graduating classes, but the severity of the decrease of graduates was reduced. Also, many institutions began to seek graduates of two year schools to enter their institution in the third and/or fourth year. It is interesting to note that the competition for two year program graduates became extremely heavy in the 1974-76 period. Additionally, some institutions took in large segments of foreign medical students or graduates into their clinical years in order to maintain the total level of enrollment. The process for returning to the four-year program was, in most cases, as agonizing as the conversion to the three-year program. Faculty were encountered with working in two tracks and the academic calendars of institutions were again in a state of flux until the total entering class was enrolled in the four-year program.

Why did institutions return to the four-year program? Two events seem rather conclusive. The first is that the financial incentives for three-year programs disappeared and, since this corresponded to the goals of introducing the program, so went the program. Secondly, since the evaluation within the institutions indicated there was essentially no difference between three- and four-year program students, the return is not based on the results of student performance measures. But, it is abundantly clear that the opinions of graduate medical education program directors had considerable influence on institutions considering the return to a four-year program. This concern was more indirect than direct on the institution. Students were returning from their interviews indicating that a bias existed, faculty members were hearing from their colleagues at other institutions that the bias was present, and a general snowballing of opinion began to show its effects within the institution.

The opposition within the institution, particularly within the medical basic science community, provided some impetus for the return. But the medical basic science faculty unhappiness has, in many cases, been overemphasized. As indicated in this report, basic science curriculum time was decreasing prior to the consideration of the three-year program. The three-year program was "just another" reinforcement to what they perceived as their diminishing influence within the academic health center. It is interesting that upon the return to the four-year program, most institutions decompressed the curriculum rather than adding additional hours. The medical basic science departments were generally satisfied with this action. For those institutions that did not undergo any curriculum change, it is clear that the entire process of converting to and from the three-year program caused some reflection on the part of medical basic science faculty regarding their discipline in the undergraduate medical education program. Since, during the operation of the three-year program, the stress which had, in the past, been expressed primarily by students was now shared by the faculty, the realization of the quantity of material became more apparent.

The four-year programs resulting from the conversion in these institutions that had conducted required three-year programs were characterized by a noticeable void in "operational" three-year optional tracks. On the surface, one would expect that the experience gained from conducting a three-year program would result in the presence of an option within the curriculum for students desiring to accelerate their graduation. In the vast majority of the schools that formerly conducted required three-year programs, the only "viable" accelerated option within the four-year program was an individualized independent study track. Information from site visits indicated that very few students would be afforded the option. Faculty members expressed the opinion that the accelerated option was sufficiently complex to discourage students from electing the option.

One must keep in mind that the optional three-year programs which have endured throughout the period of this study are those which minimized changes in the academic calendar used for the four-year program. Furthermore, the fewer changes required in the basic medical science calendar between the four-year program and the three-year program option, the better the chances were for survival of the option. Of the three successful (success being measured by continuance and faculty satisfaction) three-year optional programs, two did little or nothing to the basic science curriculum for the students in the optional program. In fact, during the basic science curriculum, optional and four-year program students were enrolled in the same classes. The other optional program changed only a six month block of the non-elective portion of the total four-year program. Conversely, those institutions with optional programs that altered the basic science calendar for the optional track encountered staffing difficulties. The separate track required additional faculty, or at the least, additional faculty time to conduct the accelerated program. This often resulted in duplication of faculty lectures and/or tutorial sessions between the two programs.

Since many of the basic medical science departments were servicing other health science curricula and in light of their other institutional responsibilities, the duplication of effort for a seemingly small percentage of students was questioned by the faculty.

The changes required for a three-year option in the clinical clerkship sciences were minimal. Since the impact on numbers of faculty needed in clinical sciences is more closely related to numbers of students primarily involved the distribution of students among the clinical clerkship rotations. Furthermore, the number of students in the optional programs was generally small, which minimized scheduling logistics.

One additional and extremely important factor is relevant to the discussion of these specific optional programs. In each of these three programs, students were required to meet specified criteria in order to be considered for acceptance in the optional track, i.e., rank in class, faculty recommendation. The selection of these students was eventually made by the student promotions or a similar committee. As one would except, the attrition from these programs was extremely small.

The final consideration in this report concerns the possible return of the three-year program concept in the future. Given the "swing of the pendulum", which frequently occurs in educational programs and methodologies, it is certainly within the realm of possibility that the idea will return. During site visits, the feeling was frequently expressed that if the cost of education continues to spiral, mechanisms and alternatives will be sought to minimize student costs. One of the considered alternatives will undoubtedly be to shorten the period of education. As indicated earlier in this report, there exists considerably more agreement with the concept of shortening the period between high school graduation and the awarding of the M.D. degree than with the concept of compressing one portion of this period. In this regard, it is noteworthy to mention that programs which provide for the awarding of the M.D. degree within six or seven years of high school graduation have experienced a longer tenure in U.S. medical schools than the three-year programs described in this study.

The savings to a student enrolled in a three-year program when compared to a four-year program student is in living expenses only. It is reasonable to assume that medical school, or undergraduate school, tuition will not decrease in the forseeable future. As indicated in this report, the maximum possible gain in living expenses between a three-year and four-year program is nine months. If a consideration in the concept of shortening the baccalaureate - M.D. education period is to minimize the student's cost of education, it would appear that a "gain" of nine months over a six or seven year period could be accommodated with minimal loss of educational program prerequisites and requirements.

The issue of a savings in institutional operating costs between three-year and four-year programs is more complex. Although the gamut of opinions was expressed during site visits, data is not available to conclusively support any opinion. If savings were realized, they were in the area of multidisciplinary laboratory usage. But it is quite clear that savings in one aspect of educational program operation may be offset by its influence on other aspects of total institutional operation. An in-depth study of this issue is necessary before valid conlusions can be drawn.

BIBLIOGRAPHY

1. Association of American Medical Colleges. *1972-73 Curriculum Directory*. Washington, D.C., 1972.
2. Carnegie Commission on Higher Education. *Higher Education and the Nation's Health: Policies for Medical and Dental Education*. New York: McGraw-Hill, 1970.
3. Page, R.G. "The Three-year Medical Curriculum". JAMA, August 10, 1970, 213(6):1012-1015.
4. Fogel, B.J. "New Programs of Medical Education and the Basic Sciences". J. Nat. Med. Assoc., May 1976, 68(3):170-171.
5. Carnegie Council on Policy Studies in Higher Education. *Progress and Problems in Medical and Dental Education: Federal Support Versus Federal Control*. San Francisco: Jossey-Bass, 1976.
6. Hubbard, W.N., J.A. Gronvall and G.R. DeMuth. *The Medical School Curriculum*. J. Med. Educ., Nov. 1970, 45(11): Part 2 Special Supplement.
7. Henja, W.F., "It Takes Four Years...Reversing the Acceleration Trend". JAMA, Oct. 1975, 234(4):387-388.
8. "What's Become of the Three-year Curriculum?" Modern Medicine, May 15, 1976.
9. Morgan, T.E. and D.D. Jones. *Trends and Dimensions of Biomedical and Behavioral Research Funding in Academic Medical Centers, 1964-1974*. Washington, D.C.: Association of American Medical Colleges, 1976.
10. Garrard, J. and R.G. Weber. "Comparison of Three- and Four-year Medical School Graduates". J. Med. Educ., June 1974, 49:547-553.
11. Hallock, J.A., J.A. Christensen, M.W. Denker, C.J. Hochberg, W.L. Trudeau and J.W. Williams. "A Comparison of the Clinical Performance of Students in Three- and Four-year Curricula". J. Med. Educ., Aug. 1977, 52(8):658-663.
12. Dinham, S.M. and R.A. Barbee. "A Post-Graduate Assessment of Three-year *vs* Four-year Medical School Graduates". Technical Report, University of Arizona College of Medicine, Jan. 1978.

13. Page, R.G. and J.G. Boulger. "An Assessment of the Three-year Medical Curriculum". J. Med. Educ., Feb. 1976, 51(2):125-126.

14. Hoffman, A.F. Three-year Curriculum, Ltr. to Ed., J. Med. Educ., Feb. 1976, 51(2):154-156.

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APPENDIX A

Objectives and Data Sources
of
Survey Questionnaire

OBJECTIVES FOR QUESTIONNAIRE ADMINISTRATION TO THREE YEAR SCHOOLS

1. Identify the factors leading to the decision to establish a three-year program.

2. Describe the components of the conversion process from a four-year to a three-year program.

3. Describe the effects of the conversion on the responsibilities and activities of the faculty, i.e., clinical and basic science.

4. Identify changes/alterations in a three-year program in the allocation of faculty time to education, research and service as compared to participation in a four-year program.

5. Identify the attitudes of three-year program faculty regarding student motivation, preparedness and satisfaction in three-year programs.

6. Identify student attitudes regarding the desirable and undesirable features of participation in a three-year program.

7. Describe the effects on facilities space utilization as a result of three-year program operation.

8. Identify the attitudes of post-graduate clinical program directors regarding graduates of three-year programs.

9. Describe the effects of three-year program operation on basic and clinical science department administration, i.e., numbers and patterns of faculty assignment to educational program, research productivity, quality of instruction.

10. Assess the impact of three-year program operation on the faculty's ability to adequately evaluate student's performance.

APPENDIX B

Objectives and Data Sources
of
Existing Data

OBJECTIVES FOR UTILIZATION OF EXISTING DATA FOR FOUR YEAR AND THREE YEAR SCHOOLS

1. Identify the changes in the amount and type of physical facilities and space utilization as a result of three-year program operation.

2. Analyze state credentialing requirements and their effects on the mobility of physicians graduating from three-year programs.

3. Compare the amount of discipline instructional input from selected years of four-year program operation with selected years of three-year program operation in each institution.

4. Analyze the changes in discipline instructional input from four-year and three-year program operation among all study schools (three-year curriculum schools).

5. Analyze the changes of discipline instructional input in institutions conducting three-year programs with a sample of four-year institutions.

6. Investigate and compare the following components of the curricular process between three-year and a sample of four-year programs

   (a) student rates of progress

   (b) student attrition (type and number)

   (c) instructional methodologies

   (d) student characteristics, i.e., grade point average, sex, ethnicity, undergraduate schools, etc.

   (e) student financial data, types of financial aid, income generating capacity, availability of financial aid

7. Investigate the changes required after transition to a shortened program with a sample of four-year schools regarding (1) number and kinds of faculty to administer curriculum and (2) the differences in the distribution of faculty effort in research, education and public service.

8. Investigate the effects of shortened programs on the size of the national health manpower pool.

9. Compare, where possible, the academic performance of students of three-year and four-year programs.

10. Compare the patterns of career choice of students graduating from three-year programs with those from a sample of four-year schools.

EXISTING DATA ANALYSIS)THREE-YEAR AND FOUR-YEAR SCHOOLS)

	AAMC CURRICULUM DIRECTORY	AAMC FACULTY ROSTER	ADMISSIONS DATA (AAMC IPS DATA SYSTEM)	STUDENT CHARACTERISTICS (ETHNICITY, SEX, ETC.) AAMC IPS SYSTEM	STUDENT PROGRESS DATA (ATTRITION, REPEAT, ETC.) AAMC IPS SYSTEM	INSTITUTIONAL DATA (FISCAL DATA, ETC.) AAMC IPS SYSTEM	HRA CREDENTIALING DATA	BHM MANPOWER DATA	INSTITUTION CURRICULUM SCHEDULES	LOME PTE SURVEY DATA
(1)						X				X
(2)							X			
(3)	X								X	X
(4)	X								X	X
(5)	X								X	X
(6a)					X					
(6b)				X	X					
(6c)	X									X
(6d)			X	X	X					
(6e)				X		X				X
(7)		X				X			X	
(8)								X		
(9)			X		X					X
(10)				X		X				X

APPENDIX C

Institutional Response Summary

The following data summary represents institutional response frequencies based upon mean and median responses of individuals at each institution. The data are summarized by institution study school category (old, optional, new) and actual number of institutions in each response interval or half interval. The number of institutions in each interval is indicated by the study school category symbol (x = old schools, o = optional schools, n = new schools) followed by the number of institutions giving that response. For example:

Very Strong		Strong		Moderate	None
x-2				x-1	
o-1	x-3	n-3	o-2	o-2	
	n-2		n-3		

It should be kept in mind that where sufficient data were not available, some institutions do not have responses on a given questionnaire section so that the total number of institutions of a given category varies from one questionnaire section to another.

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CONVERSION PROCESS

The following questions are administered to gather information with regard to the process of conversion from a four-year to a three-year undergraduate medical education curriculum. The questions cover the period from the time of the original idea through the approval of the final decision to convert to a three-year program. All information will be kept confidential and you are requested to be candid in responding to the questions.

1. Where (from what person or group) did the idea originate to consider the adoption of a three-year curriculum? Please check the one most appropriate response from those listed below.

o-1,n-2 ☐ Central University Administration or University Committee
x-6,o-1,n-2 ☐ Dean (or Dean's staff) of the Medical School
o-2 ☐ Medical School Executive Committee
☐ Medical School Curriculum Committee
o-1 ☐ Medical School Department Chairman
(specify department) ______________________________
o-2 ☐ Result of a college faculty retreat or college faculty meeting
☐ Result of a departmental faculty meeting
(specify department) ______________________________
☐ Office of Medical Education
☐ From a student group or organization (i.e., Student Council, SAMA, or Student Government)
☐ Other (please specify) ______________________________

2. To the best of your recollection, what was the extent of positive influence of each of the reasons listed below on the initial idea to consider the conversion? You are requested to indicate the extent of influence of each reason at the time of the initial idea, not the influence which may have developed during the approval process.

Reasons	Very Strong Positive Influence		Strong Positive Influence		Moderate Positive Influence		Slight Positive Influence		No Positive Influence	Do Not Know
To improve curriculum through the re-examination of content being given by each department			o-1		x-3 o-2 n-3	x-1 o-1 n-1	x-2 o-2			
To improve the educational process for students through the identification of "relevant" information (curriculum revision)			o-1	x-3 o-1 n-1	o-2 n-3	x-1 o-1	x-2 0-1			
To improve the utilization of faculty time			n-1	n-2		n-1	x-3 o-2	x-2 o-4	x-1	
To benefit the student in terms of time needed to complete requirements for M.D. degree	n-1	o-1 n-2	x-1 o-4 n-1	x-1 o-1	x-3	x-1				
To improve utilization of educational materials and resources		n-1	n-1	o-1 n-1	x-3 n-1	x-1 o-3	x-1	x-1 o-2		
To lower the cost of undergraduate medical education for the student		n-1	o-2 n-1	n-2	x-1	x-3 o-2	x-2 o-1	o-1		
Financial incentives provided by federal legislation	x-2	x-3 n-1	x-1 o-4 n-2	n-1	o-1		0-1			

2. cont'd.

Reasons	Very Strong Positive Influence		Strong Positive Influence		Moderate Positive Influence		Slight Positive Influence		No Positive Influence	Do Not Know
Financial incentives provided by state legislation		x-1 n-1	x-1	x-1 n-1	o-1	n-1	x-1 o-1 n-1	x-1 o-3	x-1	
Other (please specify)										

3. At the time of the initial considerations and/or during the process of approval, was there external influence from any of the following?

	Yes		No		Do Not Know
state medical society			x-6 o-6 n-4		
members of state government	x-1 n-2	o-1	x-5 o-5 n-2		
members of the central university administration or university committee	x-2 o-1 n-3	x-3 n-1	x-1 o-5		
members of the federal government	x-2 o-1 n-1	x-4 o-1 n-1	o-4 n-1	n-1	

4. During the process of considering the conversion to a three-year curriculum, some persons or groups may have had a noticeable positive or facilitating influence. For each person/group below, indicate the extent to which they exerted a positive or facilitating influence on the conversion to a three-year curriculum.

Person/Group	Very Strong Positive Influence		Strong Positive Influence		Moderate Positive Influence		Slight Positive Influence		No Positive Influence	Do Not Know
Central University Administration or University Committee	o-1	n-1	x-1 n-2	n-1	x-1	x-1 o-2	x-1 o-1	x-2 o-2		
Dean of the Medical School (or Dean's staff)	x-3 o-1 n-4	x-3 o-3	o-1	o-1						
Medical School Executive Committee	n-1	n-1	o-1	x-2 o-2 n-1	x-2 o-3 n-1	x-1	x-1			
Medical School Curriculum Committee	n-1	x-1 o-2	x-1 o-2 n-1	x-1 n-1	x-2 o-1 n-1	x-1 o-1				
Medical Basic Science Department Chairmen	n-1					o-2 n-1	x-2 n-2	x-3 o-4	x-1	
Medical Clinical Science Department Chairmen				n-1	x-2 o-2 n-1	x-2 o-2 n-1	x-1 o-1	x-1 o-1 n-1		
Office of Medical Education			x-2 n-2	o-1 n-1	x-2 o-1	x-1 o-2	o-1 n-1	x-1 0-1		
Student Group or Organization (i.e., Student Council, SAMA, or Student Government)				x-1 o-1		x-1 o-2	x-3 o-3	x-1		
Other (please specify)										

5. During the process of considering the conversion to a three-year curriculum, some persons or groups may have had a noticeable negative or inhibiting influence. For each person or group below, indicate the extent to which they exerted a negative or inhibiting influence on the conversion to a three-year curriculum.

Person/Group	Very Strong Negative Influence		Strong Negative Influence		Moderate Negative Influence		Slight Negative Influence		No Negative Influence	Do Not Know
Central University Administration or University Committee							n-1		x-6 o-6 n-3	
Dean of the Medical School (or Dean's staff)									x-6 o-6 n-4	
Medical School Executive Committee							x-2	x-3 o-5 n-2,	x-1 o-1 n-2	
Medical School Curriculum Committee							x-1 o-1	x-3 o-3 n-1	x-2 o-2 n-3	
Medical Basic Science Department Chairmen				x-1	x-3 o-4	x-2 o-1 n-3		o-1	n-1	
Medical Clinical Science Department Chairmen						x-2 o-2 n-1	x-2 o-3	x-2 o-1 n-2	n-1	
Office of Medical Education								n-1	x-6 o-6 n-3	
Student Group or Organization (i.e., Student Council, SAMA, or Student Government)								x-1 o-1	x-5 o-5	
Other (please specify)										

6. In your judgment, what was the "climate" within the institution during the considerations (process of approval) to adopt a three-year program? Please check all that apply from the choices given below.

x-6,o-4,n-3 ☐ The institution was seeking avenues for utilization of federal incentive legislation.

For Old & Option Schools Only

☐ The institution was experiencing a period of reduced rate of hiring of new faculty.

x-1 ☐ The hiring of new faculty and available funding for new faculty positions was unchanged from the period two years prior to consideration to convert to a three-year curriculum.

x-3,o-4 ☐ The faculty was expressing the need for curricular change.

x-1,o-2 ☐ The students were expressing the need for curricular change through their representative student organizations.

For New Schools Only

n-2 ☐ The state government was strongly encouraging the adoption of a three-year undergraduate medical education program.

☐ The new faculty was expressing the desire for a three-year program.

n-4 ☐ The decision to adopt a three-year program was made before the hiring of new faculty (excluding department chairmen).

☐ Other (please specify) ______________________________

____

Comments regarding responses given above ______________

____

____

____

____

7. For each of the persons or groups listed below, indicate the extent or degree of their participation in the decision-making process (from conception of idea to final approval) to convert to a three-year undergraduate medical education curriculum. Please include participation in the development of the conversion recommendation and advising during the decision-making process.

Person/Group	Very Extensive Participation	Extensive Participation	Moderate Participation	Slight Participation	No Participation	Do Not Know
Central University Administration or University Committee		0-1 n-1	x-1 n-2 x-1 o-1 n-1	o-1 x-1 0-1	x-3 o-2	
Dean of the Medical School (or Dean's staff)	x-2 n-2	x-4 o-4 n-1 o-1	0-1 n-1			
Medical School Executive Committee	n-1	o-1 x-2 n-1	x-2 o-3 n-2 x-2 o-2			
Medical School Curriculum Committee		x-2 o-4 n-1 x-4 n-1	o-2 n-2			
Medical Basic Science Department Chairmen		n-1 o-1 n-1	x-4 o-1 n-2 x-1 o-4	x-1		
Medical Clinical Science Department Chairmen		o-1 n-1	x-5 o-2 n-2 x-1 0-2	o-1 n-1		
Office of Medical Education	x-1 n-1	x-2 n-1 o-2 n-1	x-1 o-1 x-1 o-1	o-1 n-1	x-1 o-1	
Student Group or Organization (i.e., Student Council, SAMA, or Student Government)			x-1 o-2 o-2	x-1 o-2 x-3	x-1	
Special Faculty Committee (please specify)						
________						
________						
________						

8. To the best of your knowledge, please indicate the order (sequence) of consideration of the recommendation to adopt the three-year curriculum. Please start with the first group that ratified the recommendation and end with the office or committee that made the final approval and thus committed the institution to initiate a three-year program. Start your sequence with #1 for the group that first ratified the recommendation. Indicate only those groups involved in the approval process.

☐ Central University Administration or University Committee
☐ Dean of the Medical School (or Dean's staff)
☐ Medical School Executive Committee
☐ Medical School Curriculum Committee
☐ Medical Basic Science Department Chairmen
☐ Clinical Science Department Chairmen
☐ The Medical Faculty (by total college vote)
☐ Student Group or Organization (i.e., Student Council, SAMA, or Student Government)
☐ Other (please specify) ____________________

____

9. Please check the one or more units of those below which has final veto power in a curricular decision (i.e., the conversion to a three-year curriculum) within your institution.

x-2,o-1,n-3 ☐ Central University Administration or University Committee
x-5,o-3,n-3 ☐ Dean of the Medical School (or Dean's staff)
x-2,o-1,n-2 ☐ Medical School Executive Committee
x-1 ☐ Medical School Curriculum Committee
x-4,o-4,n-1 ☐ The Medical Faculty (by total college vote)
☐ Other (please specify) ____________________

____

10. In the process of consideration of the recommendation to change to a three-year curriculum, was it necessary for all medical basic science and clinical science departments to approve the proposal through a vote at a departmental faculty meeting?

☐ Yes (100% approval required)

x-6 o-6 n-4 ☐ No, _____% required (indicate what percentage was required)

11. In the process of final approval (as indicated by the sequence above - Item 8) please indicate those units which, by their veto power could have stopped any further consideration of the recommendation to convert to a three-year curriculum.

x-6,o-2,n-3 ☐ Central University Administration or University Committee

x-6,o-4,n-4 ☐ Dean of the Medical School (or Dean's staff)

x-2,o-2,n-2 ☐ Medical School Executive Committee

o-1

x-1,o-2,n-1 ☐ Medical School Curriculum Committee

x-4,o-4 ☐ The Medical Faculty (by total college vote)

☐ Other (please specify) ______________________________

12. During the considerations on whether to adopt a three-year curriculum, was it necessary to arrive at a final decision within a specified period of time?

x-2 o-1 n-4 ☐ Yes

x-3 o-2

x-1 o-3 ☐ No

☐ Do Not Know

Regardless of whether a time period was specified, what was the length of time between the initial idea and the time when a final decision was made.

n-1 ☐ less than 6 months

n-1

x-1,n-1 ☐ 6 to 12 months

x-2,o-2

x-3,o-2 ☐ 1 to 1½ years

o-2,n-1

☐ more than 1½ years

13. Did the medical students participate in any manner in the process of formulating the recommendation to adopt the three-year curriculum?

x-2 o-5 ☐ Yes

x-3 o-1

x-1 ☐ No

n-4 ☐ Do Not Know

14. Did medical students participate in any manner in the process of approving the recommendation to adopt the three-year curriculum?

x-2 o-2 ☐ Yes x-2 o-3 x-2 o-1 ☐ No ☐ Do Not Know

15. If students did participate in the formulation and/or process of approval to adopt a three-year program, please check the one statement below which best describes their mode of influence.

☐ Student representation on Medical School Executive Committee

x-5,o-5 ☐ Student representation on Medical School Curriculum Committee

☐ Student representation in departmental faculty meetings

☐ Student organization was included as one of the ratifying bodies for the decision

☐ Other (please specify) ______________________________

____

16. In retrospect, do you feel the initiation of the considerations of a three-year curriculum in your institution was a means of encouraging faculty to become more involved in the medical education process and concern for curriculum.

☐ Yes, definitely

x-1

o-4 ☐ Yes, to some extent

x-5,o-2

☐ No

☐ Do not know

17. In retrospect, do you feel the initiation of the considerations of a three-year curriculum in your institution was a means of encouraging faculty to revise the undergraduate medical education curriculum?

☐ Yes, definitely

x-2,0-1

x-4,o-3 ☐ Yes, to some extent

o-2

☐ No

☐ Do not know

18. In your opinion, did the conversion from the four-year to the three-year curriculum result in a re-examination of the quantity of didactic content for which students were held responsible?

x-2,o-1 ☐ Yes, definitely
x-3,o-3
x-1,o-2 ☐ Yes, to some extent
☐ No
☐ Do not know

19. Following the institutional approval to adopt a three-year curriculum, what changes occurred in converting to the new curriculum? Indicate by checking those statements below which apply.

x-6,o-6,n-4 ☐ Reduction of students' free time
x-5,o-4,n-3 ☐ Reduction in student elective opportunities
x-6,o-6,n-4 ☐ Decrease of students' vacations
x-5,o-2,n-4 ☐ Increase in interdisciplinary teaching
x-6,o-4,n-3 ☐ Reduction of student laboratories
x-1,n-1 ☐ Elimination of student laboratories
x-6,o-5,n-1 ☐ Reduction in time permitted to medical basic science departments in curriculum
x-1,o-3,n-1 ☐ Reduction in time permitted to clinical science departments in curriculum
x-1,o-1,n-1 ☐ No change in actual hours of lecture for medical basic sciences
☐ No change in actual hours of laboratory for medical basic sciences
o-1,n-2 ☐ Reduction in required clinical rotations
☐ Other (please specify) ________________________________

____

20. At the beginning of the implementation of the three-year curriculum, what was the degree of influence of each of the following objectives?

Objectives	Very Strong Positive Influence		Strong Positive Influence		Moderate Positive Influence		Slight Positive Influence		No Positive Influence	Do Not Know
To improve curriculum through the re-examination of content being given by each department		n-1	o-1 n-1	x-3 o-2 n-1		x-3 o-2 n-1	o-1			
To improve the educational process for students through the identification of "relevant" information	n-1	x-1	x-1 n-1	x-1 o-4 n-1	x-1 o-1 n-1	x-2 o-1				
To improve the utilization of physical facilities		n-2		n-2	o-2	x-2	x-3 o-1	x-1 o-3		
To improve the utilization of faculty time		n-1	n-1			n-2	x-2 o-4	x-4 o-2		
To benefit the student in terms of time needed to complete requirements for M.D. degree		o-2 n-3	x-2 o-2	o-2 n-1	x-2	x-2				
To improve utilization of educational materials and resources		n-1	n-1	n-1	o-2	x-2 o-3 n-1	x-3 o-1	x-1		
To lower the cost of undergraduate medical education for the student			o-1 n-2	o-1 n-1	x-1 o-1 n-1	x-3 o-2	x-2 o-1			

20. cont'd.

Objectives	Very Strong Positive Influence	Strong Positive Influence	Moderate Positive Influence	Slight Positive Influence	No Positive Influence	Do Not Know
Financial incentives provided by federal legislation	____ x-5 o-3	x-1 n-3 ____ o-1	o-1 n-1 ____ o-1	____	____	____
Financial incentives provided by state legislation	____ x-1	x-1 o-1 n-1 ____ o-1	x-1 n-2 ____	x-1 o-2 n-1 ____ x-1 o-2	x-1 ____	____
Other (please specify) ____________ ____________ ____________	____	____	____	____	____	____

21. Following the institutional approval to adopt a three-year curriculum, in your opinion, which one of the following underwent the most dramatic change in content and time revision?

x-5, o-3, n-2 ☐ Disciplines traditionally offered in the first year (i.e., anatomy, physiology, biochemistry).

x-1, o-1

x-1, o-2, n-1 ☐ Disciplines traditionally offered in the second year (i.e., pathology, pharmacology, medical microbiology).

x-1, o-2, n-1 ☐ Disciplines traditionally offered in the third and fourth years (i.e., clinical service rotations, clinical electives).

☐ None of the above segments underwent change.

Comments ____

____

____

22. Following the final decision to adopt the three-year curriculum, how much time was provided for departments to accommodate (make necessary changes) to the new program duration? Consider the time from the final approval to the entrance of the first student in the new program?

☐ less than 6 months
x-3, o-2, n-2
x-1,o-3,n-1 ☐ 6 to 12 months
x-2, o-1, n-1
☐ 1 to 1½ years
☐ more than 1½ years

BASIC SCIENCE DEPARTMENT CHAIRMEN

INSTRUCTIONS FOR PROGRAM OPERATION QUESTIONNAIRE

The following questions deal with aspects of the operation of a three-year program. In many instances, the questions require you to compare aspects of the operation of a three-year program with the way those things were in a four-year program. Since the first year of operation of a three-year program may involve requirements which exist simply because of the initial implementation of a new program (e.g., double classes, getting the "bugs" out of a new program, etc.), please do not consider the first year of operation in responding to the questions. Rather, where three-year program characteristics are being sought, consider the second and subsequent years of program operation -- the years of normal operation of the three-year program.

PROGRAM OPERATION

23. Compared to the four-year program, the operation of a three-year program may or may not have affected your department's time spent in various teaching activities for undergraduate medical students. Indicate below, for each activity, your department's time spent in that activity in the operation of a three-year program compared to what it was in the four-year program.

Department's time spent on this activity was:

Activities	Greatly Increased		Slightly Increased		Unchanged		Slightly Decreased		Greatly Decreased
lectures (basic science)			n-1		x-1 n-4	x-1 o-1	o-3	x-2 o-1	x-1
medical student laboratories			n-1		o-1	x-1 o-1 n-1	x-1	x-1 o-3 n-2	x-2 n-1
department research					x-4 o-1 n-2	x-1 o-4	n-2	n-1	
individual medical student instruction		n-1			x-1 o-1 n-2	x-1 o-1 n-1	x-1 o-1 n-1	x-2 o-2	
time spent in curricular revision and updating (only consider departmental content revision)	x-1 n-2	x-1 o-2 n-1	x-1 o-2 n-1	x-2	o-1 n-1				
discussion groups		n-1		x-1 o-1 n-1	x-2 o-3 n-2	x-1 o-1 n-1			x-1
participation on interdisciplinary committees concerned with undergraduate medical education	x-1 n-1	x-1 o-2 n-2	x-1	x-1 o-2 n-1	x-1 o-1 n-1				
faculty free time				x-1	x-1 o-2	o-1	x-3 o-2 n-3	n-2	
vacation time					x-3 o-2	x-1 o-3 n-3	x-1 n-1	n-1	
other (please specify)									

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24. In your opinion, compared to the four-year program, the operation of the three-year program may or may not have affected the quality of your department's various teaching activities for medical students. Please indicate below, for each activity, your opinion of the quality of your department's teaching activities in the three-year program compared to what it was in the four-year program.

The quality of this activity was:

Activities	Greatly Increased	Somewhat Increased		Unchanged		Somewhat Decreased		Greatly Decreased
lectures (basic science)			o-1 n-1	x-2 o-2 n-3	x-1 o-1 n-1	x-1	o-1	x-1
medical student laboratories			o-1	n-2	o-2	x-2 o-1 n-2	x-2 o-1	x-1 n-1
department research			o-1	x-2 o-2 n-3	x-3 o-2	n-2		
individual medical student instruction			o-1 n-3	x-1 o-1	x-3 n-1	o-3 n-1	x-1	
discussion groups			n-2	x-1 o-3 n-2	x-3 o-1 n-1	o-1		x-1
other (please specify)								

25. Your department's teaching responsibilities in the conduct of a three-year program may or may not require different numbers for different assignment patterns of faculty, staff, and graduate assistants as were used under the four-year program. Check the appropriate responses below for each personnel category to indicate what changes, if any, were required.

The three-year program requires:

Category of Personnel	Considerably More		Somewhat More		The Same		Somewhat Less	Considerably Less
Senior faculty (Professor & Associate Professor)		n-1	o-2 n-2	x-1 o-2 n-1	x-3 o-1	n-1		
Junior faculty (Assistant Professor & Instructor)		o-2 n-2	n-2	x-1	x-3 o-3 n-1	x-1		
Graduate Assistants			x-1 n-1		x-3 o-1 n-2	o-3 n-2	x-1 o-1	

25. cont'd.

Category of Personnel	The three-year program requires: Considerably More		Somewhat More		The Same	Somewhat Less	Considerably Less
Departmental Administrative & Clerical staff		o-1 n-3	x-2	o-2 n-1	x-3 o-2 n-1		
Other (please specify)							

26. The above changes may or may not have been entirely necessitated by the changeover to a three-year curriculum. In the spaces below, please indicate the extent to which the above changes in personnel were necessitated by the program change rather than a general increase in enrollment.

Category of Personnel	The above changes for each category were necessitated by the three-year program: Entirely		To A Large Extent		Somewhat		To A Small Extent	Not At All
Senior faculty		x-1 o-1	n-1	o-1 n-1	x-2	x-1 o-2 n-3		o-1
Junior faculty		o-1 n-1	x-1 n-1	n-1	x-2 o-1	x-1 o-2 n-2		o-1
Graduate Assistants	x-1		x-1 o-1	n-1	n-2	x-1 o-3 n-2	x-1	o-1
Departmental Administrative & Clerical staff		o-1	x-1 n-1	n-2	x-2 o-1 n-1	o-2	x-1 n-1	o-1
Other (please specify)								

27. Excluding your graduate program teaching responsibilities, does your department have teaching responsibilities in curricula other than undergraduate medical education (e.g., dentistry, nursing, allied medical professions, and other university undergraduate programs)?

x-2 o-4 n-3 ☐ Yes x-1 x-2 o-1 n-2 ☐ No

28. For each statement below, please indicate the extent to which you agree or disagree with the statement by checking the appropriate space to the right of the statement. Please respond to each statement.

	Strongly Agree		Mildly Agree		Mildly Disagree		Strongly Disagree
The operation of a three- year program has made it easier to assign and distribute departmental teaching responsibilities for the medical curriculum in my department.			o-1		n-2	x-3 o-3 n-1	x-2 o-1 n-2
The operation of a three-year program has resulted in changes in instructional methodology by departmental faculty.	x-1 o-1	x-1 o-1	x-1 o-2 n-3	x-1 n-1	x-1 o-1	n-1	
The operation of a three-year program has resulted in faculty teaching assignment conflicts with other departmental teaching responsibilities in dentistry, nursing, allied medical professions, etc.	x-1	o-2 n-1	x-1 o-1 n-1	n-3	x-3 o-1	o-1	
The operation of a three-year program has facilitated the arrangement of dedicated research time for my departmental faculty.				o-2	x-3 n-1	x-2 o-2 n-2	o-1 n-2
The conversion to a three-year program has resulted in a review of curricular content by faculty in my department.	n-1	x-1 o-1 n-1	x-3 o-2 n-2	o-1	x-1	n-1	o-1
The operation of a three-year program has made it more difficult to arrange special tutorial sessions for students that experience irregular rates of progress.	x-2 n-2	x-1 o-3 n-2	x-2	o-2 n-1			
The operation of a three-year program has made it more difficult to arrange make-up courses for medical students who do not pass the discipline.	x-4 n-3	x-1 o-2 n-1	0-2	0-1	n-1		

28. cont'd.

	Strongly Agree		Mildly Agree		Mildly Disagree		Strongly Disagree
The operation of a three-year program has led to an increase in the department's influence in undergraduate medical education curricular affairs.				n-3	x-1 o-1 n-2	x-1 o-4	x-3
The operation of a three-year program has led to a decrease in the department's influence in undergraduate medical education curricular affairs	x-3	o-2	o-1 n-1	x-1 o-1 n-3	0-1 n-1	x-1	

n-2

29. Were additional faculty positions made available to your department because of conversion to a three-year program?

n-2 ☐ Yes o-2 n-2 x-5 0-3 n-1 ☐ No

30. Do you feel that additional faculty positions should have been made available to your department because of the conversion to a three-year program?

x-2 o-2 n-2 ☐ Yes x-1 o-2 n-2 x-2 0-1 n-1 ☐ No

31. Compared to the four-year program, the operation of a three-year program may or may not have altered the effectiveness with which available facilities and space are utilized. Indicate below, for each category of facilities/space, the effectiveness with which they are utilized in the three-year program operation compared to what it was in the four-year program.

In the three-year program operation, this department's utilization of this has been:

Facilities/Space	Much More Effective		Somewhat More Effective		Unchanged		Somewhat Less Effective		Much Less Effective
student classroom lecture space		x-1 n-1	n-2	x-3 o-1	x-1 o-3 n-1	o-1 n-1			
student laboratory space		o-1 n-1	x-1 n-1	n-1	x-2 o-2 n-1	x-1 o-1		x-1 o-1	n-1
space for small group discussions			o-1 n-2	x-2 n-1	x-1 o-3	x-2 o-1 n-1	n-1		

31. cont'd.

Facilities/Space	In the three-year program operation, this department's utilization of this has been: Much More Effective	Somewhat More Effective	Unchanged	Somewhat Less Effective	Much Less Effective
assigned student study space (desk)	____	x-1 n-2 ____	x-1 o-1 n-1 o-2 n-1 ____	x-2 o-2 ____	n-1 ____
other (please specify) ____________					
____________	____	____	____	____	____

32. In the present three-year curriculum, how do you feel your department's proportion of the curriculum compares to the proportion the department should have to be optimally effective in the undergraduate medical student's education?

This department's proportion should be:

☐ Very much greater than it is now.
x-2 ☐ Much greater than it is now.
x-1,o-3,n-2
x-1,o-1,n-2 ☐ Somewhat greater than it is now.
x-1,n-1
o-1 ☐ About the same as it is now.
☐ Somewhat less than it is now.
☐ Much less than it is now.
☐ Very much less than it is now.

33. In the three-year program, do you feel that the curriculum time is properly distributed between basic science and clinical science?

n-2 ☐ Yes   x-1 o-1 n-3   x-4 0-4 ☐ No

34. In the four-year program, did you feel that the curriculum time was properly distributed between basic science and clinical science?

x-4 o-3 n-4 ☐ Yes   x-1   o-2 n-1 ☐ No

35. Indicate, for each activity below, what department time changes, if any, occurred in the second and subsequent years of three-year program operation compared to the first or initial year of three-year program operation.

Department's time in this activity was:

Activities	Greatly Increased	Somewhat Increased		Unchanged		Somewhat Decreased		Greatly Decreased
lectures			x-3 o-2 n-1	0-1 n-3	x-2 o-2 n-1			
medical student laboratories			x-1 o-1 n-1	x-1 o-2 n-1	x-2 n-3	x-1 o-2		
department research				x-2 o-3 n-5	x-3 o-1	o-1		
individual instruction		n-1	x-1 n-1	x-2 o-2 n-2	x-2 o-2	n-1	o-1	
discussion/ conference groups		n-1	x-2 n-2	o-2 n-1	o-3 o-3 n-1			
faculty free time				x-3 o-1 n-1	x-2 o-3 n-3	o-1 n-1		
vacation time				x-3 o-2 n-1	x-1 o-2 n-2	x-1 o-1 n-1	n-1	
other (please specify)								

36. During the preparation for the first year of the three-year program, you, as a department chairman, may have anticipated difficulty in the administration of various department teaching activities in the new three-year program. Please indicate below, the activities which, prior to the first year of operation, you thought would be difficult to accommodate.

x-1,n-1 ☐ Faculty staffing of discipline lectures

x-2,o-2 ☐ Faculty staffing of medical student laboratories

x-4,o-1,n-2 ☐ Arrangement of time for individual student instruction

x-4,o-3,n-3 ☐ Arrangement of time for student-faculty discussion/conference groups

x-2,o-2,n-3 ☐ Arrangement of faculty vacation time

☐ Other (please specify) ______________________

37. At the end of the first year of three-year program operation, you may or may not have found that some of the department's teaching activities actually were difficult to administer in the three-year program. By checking those that apply, please indicate below the activities which were difficult to administer in the three-year program.

n-2 ☐ Faculty staffing of discipline lectures
x-1,o-1 ☐ Faculty staffing of medical student laboratories
x-3,o-3,n-2 ☐ Arrangement of time for individual student instruction
x-2,o-3,n-2 ☐ Arrangement of time for student-faculty discussion/conference groups
x-1,o-1,n-2 ☐ Arrangement of faculty vacation time
☐ Other (please specify) ______________________________

____

38. What is your discipline? ______________________________

39. Were you at this institution when the three-year program was being considered for adoption?

☐ Yes ☐ No

CLINICAL SCIENCE DEPARTMENT CHAIRMEN

INSTRUCTIONS FOR PROGRAM OPERATION QUESTIONNAIRE

The following questions deal with aspects of the operation of a three-year program. In many instances, the questions require you to compare aspects of the operation of a three-year program with the way those things were in a four-year program. Since the first year of operation of a three-year program may involve requirements which exist simply because of the initial implementation of a new program (e.g., double classes, getting the "bugs" out of a new program, etc.), please do not consider the first year of operation in responding to the questions. Rather, where three-year program characteristics are being sought, consider the second and subsequent years of program operation -- the years of normal operation of the three-year program.

PROGRAM OPERATION

23. Compared to the four-year program, the operation of a three-year program may or may not have affected the amount of time required by your department in various activities regarding the teaching of medical students during their rotations on your clinical service (ward rotations). Please indicate below, to the best of your recollection, your department's time spent in each activity in the operation of a three-year program compared to what it was in the four-year program.

Department's time spent in the activity has:

Activities	Greatly Increased		Somewhat Increased		Not Changed		Somewhat Decreased	Greatly Decreased
Faculty time spent in teaching students	n-1	x-2	o-2 n-2	x-1 o-3	x-1			
House staff time in teaching medical students			x-1 o-1	x-2 o-4	x-1 n-2	n-1		
Didactic sessions for medical students			x-1	x-1 o-1 n-1	x-2 o-3 n-1	o-1 n-1		
Teaching of physical diagnosis skills		o-1		x-2 0-1 n-1	x-2 o-1 n-1	o-2	n-1	
Faculty participation in pre-clinical curriculum, i.e., lectures, laboratories		x-1 o-1 n-1	o-1 n-1	x-2 n-1	x-1 o-1	o-1		
Time spent in curricular revision and updating (only consider departmental content revision)	o-1 n-1	x-1 o-1 n-1	x-2 o-1 n-1	x-1 o-2				
Time for faculty to render patient service				x-2	x-1 o-2 n-2	o-3 n-1	x-1	

23. cont'd.

Activities	Greatly Increased		Somewhat Increased		Not Changed		Somewhat Decreased		Greatly Decreased
	Department's time spent in the activity has:								
Participation on interdisciplinary committees concerned with undergraduate medical education		x-1 o-1 n-1	x-2 o-3 n-1	x-1 n-1	o-1				
Time for faculty to conduct research						x-4 o-4	o-1 n-1	n-2	
Other (please specify)									

24. In your opinion, compared to the four-year program, the operation of the three-year program may or may not have affected the quality of your department's various teaching activities for medical students. Please indicate below, for each activity, your opinion of the quality of your department's teaching activities in the three-year program compared to what it was in the four-year program.

Activities	Greatly Increased		Somewhat Increased		Not Changed		Somewhat Decreased		Greatly Decreased
	The quality of this activity has:								
Faculty teaching of students			x-1 o-1 n-1	o-2	x-2 o-1 n-1	x-1 o-1 n-1			
House staff teaching of students			x-1	o-1 n-1	x-3 o-4 n-1	n-1			
Didactic sessions for medical students				x-1 o-2	x-1 o-1 n-2	x-2 o-2 n-1			
Teaching of physical diagnosis skills			o-1 n-1	o-1 n-1	x-1 o-1	x-3 o-2	n-1		

24. cont'd.

	The *quality* of this activity has:								
Activities	Greatly Increased		Somewhat Increased		Not Changed		Somewhat Decreased		Greatly Decreased
Faculty participation in preclinical curriculum, i.e., lectures, laboratories		n-1		x-1 o-3	x-2 o-1 n-2	x-1 o-1			
Time spent by faculty in rendering patient service				x-1 n-1	x-3 o-4 n-2	o-1			
Time for faculty to conduct research					o-1	x-4 o-3 n-1	o-1 n-1	n-1	
Other (please specify)									

25. Your department's teaching responsibilities in the conduct of a three-year program may or may not require different numbers of teaching faculty than was the case in the four-year program. Check the appropriate responses below for *each* personnel category to indicate the changes, if any, which were required for the operation of a three-year program.

	The three-year program requires:							
Category of Personnel	Considerably More	Somewhat More		The Same			Somewhat Less	Considerably Less
Senior faculty (Professor & Associate Professor)		x-1 n-1	x-2 o-2 n-2	x-1 o-3				
Junior faculty (Assistant Professor & Instructor)		x-1 n-2	x-3 o-5 n-1					
House staff		x-1 o-1 n-1	x-2 o-3	x-1 o-2 n-1		n-1		
Departmental Administrative & Clerical staff		x-1 o-1 n-2	x-3 o-3 n-1					
Other (please specify)								

26. Compared to the four-year program, the operation of a three-year program may or may not have affected the utilization of different categories of teaching faculty within your department. Please indicate below, for each personnel category, the faculty requirements of the three-year program operation compared to what it was in the four-year program.

	The three-year program requires:							
Category of Personnel	Considerably More		Somewhat More		No Change		Somewhat Less	Considerably Less
Strict full-time in medical school			x-2 o-1 n-2	x-1 o-3	x-1 o-1 n-1			
Geographic full-time in medical school		n-1	x-1 n-1	x-2 o-3	x-1 o-1 n-1		o-1	
Part-time salaried in medical school		n-1	x-1 n-1	x-1 o-2	x-2 o-3	n-1		
Non-salaried			o-1 n-2	x-2 o-1 n-1	x-2 o-3			
Strict full-time in affiliated institution*			x-1 o-1 n-1	x-1 o-1	x-2 o-3 n-2			
Geographic full-time in affiliated institution*			x-1 o-1 n-1	x-2 n-2	x-1 o-4			
Part-time salaried in affiliated institution*			x-1 o-1	o-1 n-3	x-3 o-3			

* (Usually teaching hospitals)

27. The above changes may or may not have been entirely necessitated by the change to a three-year program. In the spaces below, please indicate the extent to which the above changes in personnel were necessitated by the program change rather than a general increase in enrollment.

	The above changes for each category were necessitated by the three-year program:						
Category of Personnel	Entirely	To A Large Extent	Somewhat		To a Small Extent		Not At All
Strict full-time in medical school	n-1		x-1 o-1 n-1	x-2 n-1	x-1 o-2	o-1	0-1

27. cont'd.

The above changes for each category were necessitated by the three-year program:

Category of Personnel	Entirely		To A Large Extent		Somewhat		To A Small Extent		Not At All
Geographic full-time in medical school			n-1		x-1 n-1	n-1	o-3	x-3	0-2
Part-time salaried in medical school			n-1	x-2	x-2	o-1 n-2	o-2	x-1 o-1	x-1 0-1
Non-salaried			n-1	n-2	x-2 0-2		o-1	x-1	x-1 0-2
Strict full-time in affiliated institution*				x-1	o-1 n-3		x-1 o-1	x-1 o-2	x-1 o-1
Geographic full-time in affiliated institution*			n-1	x-1	n-2		x-1 o-2	x-1 o-1	x-1 o-2
Part-time salaried in affiliated institution*			n-1		x-1 n-2	o-1	o-2	x-2 o-1	x-1 o-1

* (Usually teaching hospitals)

28. As a result of the conversion to a three-year undergraduate program, what changes, if any, occurred in the proportion of the medical student's clinical education for which your department is responsible?

	Greatly Increased	Somewhat Increased		Remained Same		Somewhat Decreased	Greatly Decreased
Required rotation time		n-1	n-1	x-2 o-3 n-1	x-2 o-1	o-1	
Clinical electives			o-2	x-1 o-1 n-1	x-3 o-2	n-2	
Other (please specify)							
______________							
______________							

29. Did the conversion to a three-year program result in any changes in the utilization of teaching patients for undergraduate medical education? Do not consider changes caused only by increased enrollment. Please indicate your responses by checking the appropriate spaces below.

Three-year program conversion resulted in:

	Much More Utilization		Somewhat More Utilization		No Change		Somewhat Less Utilization	Much Less Utilization
In-patients		n-1	x-1	x-1 o-3	x-2 o-1 n-2	o-1		
Out-patients				x-1 o-1 n-1	x-3 o-2 n-1	o-1 n-1		

30. Please check below what affect, if any, the operation of a three-year undergraduate medical curriculum has had upon your total department's proportion of time devoted to education, service, and research compared to what it was for the four-year program.

Department's proportion of time has:

	Greatly Increased		Somewhat Increased		Not Changed		Somewhat Decreased		Greatly Decreased
Education	n-1	n-1	x-2 o-3	x-2 o-1 n-1	o-1				
Service			x-1	x-1 o-2 n-1	x-2 o-2 n-2	o-1			
Research				o-1	x-2	x-1 o-4	x-1	n-3	

31. The following two questions ask your perceptions of certain aspects of the student's level of preparation at two different times during the clinical portion of their medical education: A) upon entry to their first clinical service rotation following the completion of their preclinical training and B) after approximately six months of clinical education. In each instance you are requested to compare three-year program students with those that formerly entered your service when your institution conducted a four-year program. Please indicate your opinions by checking the appropriate response for each statement below.

Compared to previous four-year program students, the three-year program students are:

	Much Better Prepared		Better Prepared		About The Same		Less Well Prepared		Much Less Well Prepared
A. Perceptions when student enters first clinical rotation									
Ability to take patient history			o-1		x-1 o-1 n-1	x-1 o-2 n-1	x-1 o-1 n-1	x-1	
Ability to conduct physical examinations				o-1	x-1 0-1	o-2 n-2	x-2 o-1 n-1	x-1	
Ability to formulate a differential diagnosis					o-1	x-2 o-3 n-3	x-1 o-1	x-1	
Ability to formulate therapeutic plan					o-1	x-2 o-3 n-1	x-1 n-2	x-1 o-1	
Overall knowledge of basic science				o-1	o-1	x-2 o-1 n-3	o-2	x-2	
Ability of student to adapt basic science information to clinical setting				o-1	n-1	o-2 n-1	x-3 o-2 n-1	x-1	
Ability of student to synthesize (integrate) knowledge in clinical setting						x-1 o-4 n-3	x-2 o-1	x-1	
Other (please specify)									
______________									
______________									

31. cont'd.

Compared to previous four-year program students, the three-year program students are:

B. Perceptions of students after approximately six months of clinical service education

	Much Better Prepared		Better Prepared		About The Same		Less Well Prepared		Much Less Well Prepared
Ability to take patient history				o-1	x-2 n-2	x-2 o-4 n-1			
Ability to conduct physical examinations					x-3 o-1 n-2	x-1 o-4 n-1			
Ability to formulate a differential diagnosis				o-1	x-1 o-1 n-1	x-3 o-2 n-2	o-1		
Ability to formulate therapeutic plan				o-1	x-1 o-2 n-2	x-2 o-1 n-1	x-1 o-1		
Overall knowledge of basic science				o-1	o-1 n-1	x-2 o-2 n-1	x-1 o-1 n-1	x-1	
Ability of student to adapt basic science information to clinical setting				o-1	o-1 n-2	x-3 o-2 n-1	o-1	x-1	
Ability of student to synthesize (integrate) knowledge in clinical setting					x-1 o-2 n-2	x-3 o-2 n-1	o-1		
Other (please specify)									

32. As a clinical department chairman involved in the selection of interns and residents for your specialty at your institution, do you feel that the pool of applicants graduating from three-year programs are as competitive for these positions as those students graduating from four-year programs?

☐ Yes, definitely
n-1
o-1
☐ Yes, to some extent
x-1, o-2
x-1, n-2
☐ Uncertain
x-1
☐ No, not entirely
x-1, o-2
☐ No, definitely not

33. Do you feel that, generally across the country, three-year program graduates are as competitive for internships and residencies in your specialty as graduates of four-year programs?

☐ Yes, definitely
o-1
☐ Yes, to some extent
x-1, o-2, n-1
n-1
☐ Uncertain
x-1, n-1
x-1
☐ No, not entirely
x-1, o-2
☐ No, definitely not

If answer is "no", please indicate why by checking the appropriate statements below.

x-4, o-4, n-3 ☐ Four-year program students tend to be more mature.
x-3, o-4, n-1 ☐ Four-year program students possess more clinical experience.
x-4, o-3, n-1 ☐ Four-year program students tend to possess more depth in their knowledge.
x-2, o-2 ☐ Four-year program students have demonstrated better performance in post-graduate education.
☐ Other (please specify) ______________________________
____
____

34. Regarding the availability of internships/residencies for graduates of three-year medical programs, do you feel there is a loss in necessary undergraduate clinical experience by three-year graduates?

☐ Yes, very much so
x-2, o-1
o-2, n-2 ☐ Yes, to some extent
x-2, o-2
☐ Uncertain
n-1
☐ No, not usually
☐ No, definitely not

If "yes", is this lessening of experience critical in the student's competitiveness for "quality" positions following graduation from medical school?

o-1 ☐ Yes, very much so
x-2
☐ Yes, to some extent
x-2, o-3
n-3 ☐ Uncertain
o-1
☐ No, not usually
☐ No, definitely not

35. In your opinion, if there is a loss, can this loss be regained relatively easily by the student during the first portion of his internship and/or residency?

n-1 ☐ Yes, very definitely
o-2, n-1
x-2, o-1 ☐ Yes, to some extent
x-1, n-1
x-1, o-2 ☐ Uncertain
☐ No, not necessarily
☐ No, definitely not

36. Do you, as chairman in the selection of interns/residents, feel you have less information on which to judge the quality of an applicant from a three-year program compared to an applicant from a four-year program?

☐ Yes, very definitely
o-2, n-1
x-1, o-1 ☐ Yes, to some extent
x-2, o-1
x-1, o-1, n-1 ☐ Uncertain
n-1
☐ No, not necessarily
☐ No, definitely not

37. As a faculty member, compared to four-year students, do you feel you have sufficient information about the three-year program student's performance when requested to write recommendations for post-graduate training?

n-1 ☐ Yes, very definitely
x-1, n-1
x-1, o-1 ☐ Yes, to some extent
x-2, o-3
n-1 ☐ Uncertain
☐ No, not necessarily
o-1
☐ No, definitely not

38. Please indicate your specialty. ______________________________

39. Were you at this institution when the three-year program was being considered for adoption?

☐ Yes ☐ No

BASIC SCIENCE FACULTY

INSTRUCTIONS FOR PROGRAM OPERATION QUESTIONNAIRE

The following questions deal with aspects of the operation of a three-year program. In many instances, the questions require you to compare aspects of the operation of a three-year program with the way those things were in a four-year program. Since the first year of operation of a three-year program may involve requirements which exist simply because of the initial implementation of a new program (e.g., double classes, getting the "bugs" out of a new program, etc.), please do not consider the first year of operation in responding to the questions. Rather, where three-year program characteristics are being sought, consider the second and subsequent years of program operation -- the years of normal operation of the three-year program.

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PROGRAM OPERATION

1. For each activity below, please indicate the extent to which the operation of a three-year undergraduate medical education curriculum altered the amount of your personal time spent at the activity compared to the time spent in that activity during the operation of the four-year program.

Activity	Greatly Increased		Somewhat Increased		Was Not Changed		Somewhat Decreased		Greatly Decreased
Number of lectures				o-2 n-2	x-2 o-2 n-3	x-3 o-1 n-1	o-1		
Student laboratory teaching					o-3	x-2 n-3	x-2 o-2 n-2	x-1 o-1	n-1
Scheduled student group discussions		n-1		o-4 n-1	x-3 o-2 n-2	x-2 n-2			
Individual student tutorial sessions	n-1		o-1 n-1	x-1 o-2 n-2	x-3 o-3 n-1	x-1 n-1			
Personal research activities (proposal writing & participation)					x-3 o-3 n-2	x-1 o-3 n-2	x-1 n-1		n-1
Dedicated blocks of research time (no assigned teaching during this period)			n-1		x-2 o-1 n-1	x-2 o-4 n-1	x-1 o-1 n-3		
Time spent on committees involved with medical student affairs (i.e., evaluation, curricular logistics)	n-2	x-1 o-1 n-1	x-2 o-3 n-2	x-2 o-1 n-1	o-1				
Time spent in curricular revision & updating (only consider departmental content revision)		o-1 n-3	x-5 o-4 n-2	o-1 n-1					
Time spent in your personal preparation for lectures, student discussions, & laboratory sessions			x-1 o-1 n-1	x-4 o-3 n-4	o-2 n-1				

1. cont'd.

Activity	Greatly Increased		Somewhat Increased		Was Not Changed		Somewhat Decreased		Greatly Decreased
Your participation on interdisciplinary committees concerned with undergraduate medical education	n-1	x-1 n-2	x-2 o-2	x-2 o-3 n-1	o-1 n-2				
Teaching departmental courses to non-medical students		n-1		x-1 o-4 n-2	x-4 o-2 n-2			n-1	
Professional activities (e.g., associations, professional association committee membership, consultation, etc.)				o-1 n-2	x-5 o-4 n-3	o-1 n-1			
Personal free time					x-1 n-1	x-3 o-5 n-2	x-1 o-1 n-3		
Personal vacation time					x-1 o-1 n-1	x-3 o-5 n-2	x-1 n-3		
Other (please specify)									
______________									
______________									
______________	______		______		______		______		______

2. What impact has the participation in a three-year curriculum had upon your research productivity - the extent to which you are able to obtain and conduct funded research?

☐ Has greatly decreased my research productivity.

x-1, n-1 ☐ Has somewhat decreased my research productivity.

x-2, o-3, n-4

x-2, o-3 ☐ Has neither decreased nor increased my research productivity.

n-1

☐ Has somewhat increased my research productivity.

☐ Has greatly increased my research productivity.

3. Do you have, within your teaching obligations in the three-year program, sufficient continuous research time?

x-3 o-3 n-3 ☐ Yes x-2 o-2 n-3 o-1 ☐ No

4. When your institution operated a four-year program, did you then have sufficient continuous research time within your teaching obligations?

x-5 o-5 n-6 ☐ Yes o-1 ☐ No

5. Did the conversion to a three-year program cause you to redistribute your periods of research activity?

x-1 o-1 n-1 ☐ Yes x-3 o-5 n-4 x-1 n-1 ☐ No

If "yes", did the redistribution facilitate, inhibit, or have no effect on your research activity?

n-1 ☐ Facilitated

x-1, n-2 ☐ Had no effect

x-4, o-4, n-1
o-2, n-2 ☐ Inhibited

6. Did the process of conversion and subsequent teaching activity in the three-year program provide increased opportunity to interact with faculty from other departments?

x-1 o-4 ☐ Yes x-2 o-5 x-2 o-1 n-2 ☐ No

If "yes", has this been a positive effect of the curriculum change?

x-4 0-5 n-5 ☐ Yes o-1 ☐ No

If "yes", has the interdepartmental interaction initiated or facilitated any interdisciplinary basic research efforts?

n-1 ☐ Yes o-2 n-3 x-4 o-4 n-1 ☐ No

7. Did the conversion to the three-year program bring about any changes in your personal instructional methodology?

x-1 o-2 n-3 ☐ Yes x-3 o-4 n-2 x-1 n-1 ☐ No

7. cont'd.

If "yes", how would you evaluate the impact of the change upon your teaching effectiveness?

My teaching effectiveness was:

n-1 ☐ Greatly increased
n-1
n-1 ☐ Somewhat increased
x-1, n-2
x-2, o-4 ☐ Unchanged
x-2, o-1
o-1, n-1 ☐ Somewhat decreased
☐ Greatly decreased

8. When you participated in your institution's four-year program, did you write, and distribute to students, instructional objectives for your subject area of responsibility? (Please do not consider course or lecture outlines as instructional objectives.)

o-1 n-1 ☐ Yes x-1 o-2   x-4 o-3 n-5 ☐ No

9. Do you presently write, and distribute to students, instructional objectives for your subject area of responsibility? (Again, please do not consider course or lecture outlines as instructional objectives.)

o-3 n-6 ☐ Yes x-4 o-2   x-1 o-1 n-1 ☐ No

If "yes", did the process of converting to a three-year program initiate your utilization of instructional objectives?

x-1 o-1 n-3 ☐ Yes x-1 o-1 n-1   x-3 o-3 n-1 ☐ No

10. Do you feel that the content within your discipline for which students are held responsible in the three-year program has significantly changed from that which was required in the four-year program?

☐ Very much changed
x-1
x-1, o-1, n-1 ☐ Somewhat changed
x-2, o-4, n-3
x-1 ☐ Slightly changed
n-1
o-1 ☐ Not changed at all

11. Do you feel that the conversion to a three-year program resulted in a subject matter compression (same content in a shorter period of time) in your discipline?

x-5 o-3 n-6 ☐ Yes o-3   n-1 ☐ No

12. Do you feel that the conversion to a three-year program resulted in a rather extensive departmental faculty revision of content to accommodate the new program duration?

☐ Yes, very much so
x-2, n-1
x-1, o-3, n-2 ☐ Yes, somewhat
x-2, o-1, n-3
o-2 ☐ No

13. As a result of the conversion to a three-year program has laboratory teaching in your discipline become more demonstration?

x-1 o-3 n-2 ☐ Yes x-4 o-1 n-4 o-2 ☐ No

14. In general, would you consider that three-year program students who complete studies in your discipline are as well prepared for their clinical education as four-year program students?

☐ Yes, very definitely
o-1
o-1, n-2 ☐ Yes, generally
o-1, n-2
x-3, o-1 ☐ No, not necessarily
x-2, o-2, n-2
☐ No, definitely not

15. In general, would you consider that three-year program students who complete studies in your discipline are as well prepared in your discipline as four-year program students?

☐ Yes, very definitely
o-1
o-1 ☐ Yes, generally
o-1, n-2
x-3, o-1, n-2 ☐ No, not necessarily
x-2, o-2, n-1
n-1 ☐ No, definitely not

16. In preparation for the presentation of your subject areas (lectures) to the three-year program students, did you increase the utilization of associated learning resources (i.e., read-slide programs, movies, video tapes, etc.) compared to what it was for four-year program students?

n-2 ☐ Yes x-4 o-5 n-3 x-1 o-1 n-1 ☐ No

16. cont'd.

If "yes", which of the following best describes your reasons for the increased utilization of associated learning materials?

x-3, o-1, n-2 ☐ Provided opportunity for presentation of material that could not be covered in allotted lecture/discussion time.

x-1, o-4, n-3 ☐ Provided opportunity to clarify concepts presented in lecture.

x-2, n-1 ☐ Revisions in presentations required to accommodate three-year conversion necessitated the use of associated learning materials.

☐ Other (please specify) ____________________

____

Did you prepare and develop your own self-instructional programs?

o-3 n-2 ☐ Yes   x-5 o-2 n-3 n-1 ☐ No   ☐ Not Used

17. What is your discipline? ____________________

What is your rank?

☐ Professor
☐ Associate Professor
☐ Assistant Professor
☐ Instructor
☐ Other (please specify) ____________________

18. Were you at this institution when the three-year program was being considered for adoption?

☐ Yes   ☐ No

CLINICAL SCIENCE FACULTY

INSTRUCTIONS FOR PROGRAM OPERATION QUESTIONNAIRE

The following questions deal with aspects of the operation of a three-year program. In many instances, the questions require you to compare aspects of the operation of a three-year program with the way those things were in a four-year program. Since the first year of operation of a three-year program may involve requirements which exist simply because of the initial implementation of a new program (e.g., double classes, getting the "bugs" out of a new program, etc.), please do not consider the first year of operation in responding to the questions. Rather, where three-year program characteristics are being sought, consider the second and subsequent years of program operation -- the years of normal operation of the three-year program.

PROGRAM OPERATION

1. For each activity listed below, please indicate the extent to which the operation of a three-year curriculum altered the amount of your personal time spent at the activity compared to the time spent in that activity during the operation of the four-year program.

Activity	Greatly Increased		Somewhat Increased		Unchanged		Somewhat Decreased		Greatly Decreased
Lecture time in preclinical curriculum		n-1	x-1 o-1 n-1	x-1 o-3	x-2 o-1 n-2	x-1 n-1	o-1 n-1		
Teaching of didactic sessions with students during ward rotations			n-1	x-2 o-2 n-1	x-3 o-4	n-2	n-2		
Conduct of group discussion sessions with students during ward rotations				o-1 n-1	x-4 o-5 n-4	x-1 n-1			
Individual tutorial sessions			o-1	o-2 n-1	x-5 o-2 n-4	o-1 n-1			
Teaching of history taking skills		n-1	o-1 n-1	o-3	x-3 o-2 n-3	x-2 n-1			
Time spent in rendering patient services	n-1			x-1 o-2 n-1	x-4 o-4 n-3	n-1			
Dedicated block of research time (no assigned teaching during this period)					x-2 o-2	x-3 o-3 n-3	o-1 n-2	n-1	
Teaching of physical examination skills		n-1	o-1 n-1	o-4 n-1	x-5 n-1	o-1 n-2			
Personal research activities (proposal writing & participation)					x-3 o-2	x-1 o-2 n-2	x-1 o-2 n-3	n-1	

1. cont'd.

Activity	Greatly Increased		Somewhat Increased		Unchanged		Somewhat Decreased		Greatly Decreased
Time spent on committees involved with medical student affairs (i.e., evaluation, curricular logistics		x-1 n-2	x-1 o-3 n-1	x-3 o-2 n-3	o-1				
Time spent in curriculum revision & updating (only consider departmental content revision)	n-1	x-1 n-1	x-2 o-2 n-3	x-2 o-3	o-1 n-1				
Time spent in your personal preparation for lectures, student discussions, & laboratory sessions			x-1 o-2 n-2	x-3 o-2 n-2	x-1 o-2 n-1		n-1		
Your participation on interdisciplinary committees concerned with undergraduate medical education		n-1	n-2	x-5 o-5 n-3	o-1				
Professional activities (e.g., associations, professional association committee membership, consultation, etc.)				x-1 n-1	x-4 o-6 n-5				
Personal free time					x-1 o-2 n-1	x-3 o-1 n-2	x-1 o-3 n-2	n-1	
Personal vacation time					x-2 o-4 n-1	x-3 o-2 n-3	n-1	n-1	
Other (please specify)									
________________									
________________									

2. Does the participation in a three-year program involve any changes in the utilization of teaching patients for undergraduate medical education compared to what it was in the four-year program? Do not consider changes caused only by increased enrollment.

	Three-year program involves:				
	Much More Utilization	Somewhat More Utilization	No Change	Somewhat Less Utilization	Much Less Utilization
In-patients		o-1 n-1 x-3 o-4 n-1	x-2 o-1 n-4		
Out-patients		n-1 x-1 o-4 n-1	x-2 o-2 n-2 x-2 n-2		

3. Did the process of conversion and subsequent teaching activity in the three-year program provide increased opportunity to interact with faculty from other departments?

n-1 ☐ Yes x-2 o-3 n-3 x-3 o-3 n-2 ☐ No

If "yes", has this been a positive effect of the curriculum change?

x-3 o-6 n-5 ☐ Yes n-1 x-1 ☐ No

If "yes", has the interdepartmental interaction initiated or facilitated any interdisciplinary basic research efforts?

o-1 n-2 ☐ Yes x-1 o-2 n-3 x-3 o-3 n-1 ☐ No

4. In general, would you consider that three-year program students who complete studies in your discipline are as well prepared in your discipline as four-year program students?

☐ Yes, very definitely
x-1, o-1 ☐ Yes, generally
x-2, o-1, n-2 x-1, o-2, n-3 ☐ No, not necessarily
x-1, o-2 n-1 ☐ No, definitely not

5. The following two questions ask your perceptions of certain aspects of the student's level of preparation at two different times during the clinical portion of their medical education: A) upon entry to their first clinical service rotation following the completion of their preclinical training and B) after approximately six months of clinical education. In each instance you are requested to compare three-year program students with those that formerly entered your service when your institution conducted a four-year program. Please indicate your opinions by checking the appropriate response for each statement below.

Compared to previous four-year program students,
the three-year program students are:

A. Perceptions when student enters first clinical rotation

	Much Better Prepared		Better Prepared		About The Same		Less Well Prepared		Much Less Well Prepared
Ability to take patient history				o-1 n-1	o-3 n-1	x-4 o-2 n-2	x-1 n-2		
Ability to conduct physical examinations				o-1 n-1	o-3 n-1	x-4 o-2 n-2	x-1 n-2		
Ability to formulate a differential diagnosis					o-2 n-2	x-3 o-3	x-2 o-1 n-3	n-1	
Ability to formulate therapeutic plan					o-1 n-1	x-2 o-3 n-1	x-3 o-2 n-3		n-1
Overall knowledge of basic science				o-1	x-1 o-2	n-3	x-4 o-3 n-2	n-1	
Ability of student to adapt basic science information to clinical setting					x-1 o-2 n-3	x-3 o-5 n-2	x-1 n-1		
Ability of student to synthesize (integrate) knowledge in clinical setting				n-1	x-1 o-1 n-1	x-3 o-4 n-3	x-1 o-1 n-1		

Other (please specify)

____

5. cont'd.

Compared to previous four-year program students, the three-year program students are:

B. Perceptions of students after approximately six months of clinical service education

	Much Better Prepared		Better Prepared		About The Same		Less Well Prepared		Much Less Well Prepared
Ability to take patient history				n-1	x-2 o-6 n-3	x-3 n-2			
Ability to conduct physical examinations				n-1	x-2 o-5 n-2	x-3 o-1 n-3			
Ability to formulate a differential diagnosis				o-1 n-1	x-1 o-3 n-1	x-4 o-2 n-3		n-1	
Ability to formulate therapeutic plan					x-1 o-1 n-2	x-4 o-5 n-3		n-1	
Overall knowledge of basic science			o-1		x-1 o-1 n-2	x-3 o-4 n-3	x-1 n-1		
Ability of student to adapt basic science information to clinical setting				o-1 n-1	x-1 o-2 n-1	x-4 o-3 n-3	n-1		
Ability of student to synthesize (integrate) knowledge in clinical setting				o-1 n-1	x-1 o-2 n-1	x-4 o-3 n-3	n-1		
Other (please specify)									
______________									
______________	____		____		____		____		____

6. As a clinical faculty member, do you feel that the pool of applicants graduating from three-year programs are as competitive for post-graduate training positions as those students graduating from four-year programs?

☐ Yes, definitely
o-1
x-1
☐ Yes, to some extent
n-2
x-3, n-1
☐ Uncertain
x-1, o-4, n-2
n-1
☐ No, not entirely
o-1
☐ No, definitely not

If answer is "no", please indicate why.

x-2, o-4, n-1 ☐ Four-year program students tend to be more mature.
x-2, o-4, n-3 ☐ Four-year program students possess more clinical experience.
x-4, o-5, n-6 ☐ Four-year program students tend to possess more depth in their knowledge.
o-3, n-1 ☐ Four-year program students demonstrate better performance in post-graduate education.
☐ Other (please comment) ______________________________

____

7. Regarding the availability of internships/residencies for graduates of three-year medical programs, do you feel there is a loss in necessary undergraduate clinical experience by three-year graduates compared to four-year graduates?

☐ Yes, very much so
x-1, n-1
x-1, o-3
☐ Yes, to some extent
x-1, o-1, n-3
x-2, o-2, n-1
☐ Uncertain
n-1
☐ No, not usually
☐ No, definitely not

7. Cont'd.

If "yes", is this lessening of experience critical in the students' competitiveness for "quality" positions following graduation from medical school?

☐ Yes, very much so
x-1, n-2
o-2, n-1 ☐ Yes, to some extent
x-2, o-4, n-3
x-1 ☐ Uncertain
☐ No, not usually
☐ No, definitely not

8. In your opinion, if there is a loss, can this loss be regained relatively easily by the student during the first portion of his internship and/or residency?

☐ Yes, very definitely
x-1, n-3
x-1, o-2, n-3 ☐ Yes, to some extent
x-2, o-4
x-1 ☐ Uncertain
☐ No, not necessarily
☐ No, definitely not

9. Do you feel that intern and resident selection committees have less information on which to judge the quality of the applicant from a three-year program compared to an applicant from a four-year program?

☐ Yes, very definitely
o-1, n-1
x-2, o-1 ☐ Yes, to some extent
x-2, o-3, n-3
x-1, o-1, n-2 ☐ Uncertain
☐ No, not necessarily
☐ No, definitely not

10. As a faculty member, compared to four-year students, do you feel you have sufficient information about the three-year program student's performance when requested to write recommendations for post-graduate training?

☐ Yes, very definitely
x-3, o-3, n-4 ☐ Yes, to some extent
x-1, o-1, n-2
x-1, o-1 ☐ Uncertain
o-1
☐ No, not necessarily
☐ No, definitely not

11. Did the conversion to the three-year program bring about any changes in your personal instructional methodology?

x-1 ☐ Yes o-3 n-6 x-4 o-3 ☐ No

If "yes", how would you evaluate the impact of the change upon your teaching effectiveness?

My teaching effectiveness was:

☐ Greatly increased
o-2, n-1 ☐ Somewhat increased
x-2, o-1, n-2
x-3, o-2, n-2 ☐ Unchanged
o-1, n-1 ☐ Somewhat decreased
☐ Greatly decreased

12. When you participated in your institution's four-year program, did you write, and distribute to students, instructional objectives for your subject area of responsibility? (Please do not consider course or lecture outlines as instructional objectives.)

o-1 ☐ Yes x-2 n-2 x-3 o-5 n-4 ☐ No

13. Do you presently write, and distribute to students, instructional objectives for your subject area of responsibility? (Again, please do not consider course or lecture outlines as instructional objectives.)

o-2 n-4 ☐ Yes x-4 o-2 n-1 x-1 o-2 n-1 ☐ No

13. Cont'd.

If "yes", did the process of converting to a three-year program initiate your utilization of instructional objectives?

o-1 n-2 ☐ Yes x-2 o-1 n-2 x-3 o-4 n-2 ☐ No

14. In preparation for the presentation of your subject areas (lectures) to the three-year program students, did you increase the utilization of associated learning resources (i.e., read-slide programs, movies, video tapes, etc.) compared to what it was for the four-year program students?

n-1 ☐ Yes x-3 o-3 n-2 x-2 o-3 n-3 ☐ No

If "yes", which of the following best describes your reasons for the increased utilization of associated learning materials?

x-2, o-1, n-1 ☐ Provided opportunity for presentation of material and/or cases not available during clinical rotation.

x-2, o-1, n-2 ☐ Provided opportunity to clarify concepts required during clinical rotation.

x-1, o-2, n-2 ☐ Revisions in presentations required to accommodate three-year conversion necessitated the use of associated learning materials.

x-1, o-1 ☐ Provided review of concepts that were covered in preclinical education.

☐ Other (please specify) ________________________________

____

Did you prepare and develop your own self-instructional programs?

o-2 ☐ Yes x-3 o-1 n-4 x-2 o-3 n-2 ☐ No ☐ Not Used

15. Do you feel that the content within your discipline for which students are held responsible in the three-year program has significantly changed from that which was required in the four-year program?

☐ Very much changed
n-1
x-1, o-1, n-1 ☐ Somewhat changed
x-2, o-1, n-2
x-1, o-2, n-2 ☐ Slightly changed
x-1, o-1
o-1 ☐ Not changed at all

16. What impact has the participation in a three-year curriculum had upon your research productivity - the extent to which you are able to obtain and conduct funded research compared to what it was in four-year program operation?

☐ Has greatly decreased my research productivity.

o-1
n-2 ☐ Has somewhat decreased my research productivity.

x-1, o-3, n-2
x-4, o-2, n-2 ☐ Has neither decreased nor increased my research productivity.

☐ Has somewhat increased my research productivity.

☐ Has greatly increased my research productivity.

17. Do you have within your teaching obligations in the three-year program, sufficient continuous research time?

n-1 ☐ Yes x-1 o-3 n-1 x-4 o-3 n-4 ☐ No

18. When your institution operated a four-year program, did you then have sufficient continuous research time within your teaching obligations?

o-1 n-4 ☐ Yes x-4 o-4 n-2 x-1 o-1 ☐ No

19. Did the conversion to a three-year program cause you to redistribute your periods of research activity?

o-1 n-2 ☐ Yes x-2 o-2 n-4 x-3 o-3 ☐ No

If "yes", did the redistribution facilitate, inhibit, or have no effect on your research activity?

☐ Facilitated

x-1, n-1 ☐ Had no effect

x-2, o-1, n-4
x-2, o-4, n-1 ☐ Inhibited

20. What is your specialty? ____

21. Please indicate your rank below:

☐ Professor
☐ Associate Professor
☐ Assistant Professor
☐ Instructor
☐ Resident/Intern
☐ Other (please specify) ____________________

22. Were you at this institution when the three-year program was being considered for adoption?

☐ Yes ☐ No

FACULTY IMPRESSIONS

Below are listed a number of statements regarding three-year undergraduate medical education programs and their impact upon undergraduate medical students. Please indicate your personal views regarding each statement below by circling the appropriate response. Even though a number of the statements are very general, please indicate your level of agreement or disagreement with each statement as it appears. In making your responses to the statements, please refer to the categories of agreement/disagreement defined below.

	STRONGLY AGREE	AGREE		MILDLY AGREE		MILDLY DISAGREE		DISAGREE		STRONGLY DISAGREE
1. Students appear to be more satisfied with three-year programs than with four-year programs					o·1 n·2	o·1 n·1	x·3 o·3 n·1	x·1 o·1 n·2	x·1	
2. Students participating in and graduating from three-year programs appear to be somewhat less mature in their outlook and learning behavior than four-year program students.			x·2 n·3	x·2 o·3 n–1	o·3 n·1	x·1 n·1				
3. Three-year programs are generally more relevant to the students' needs than are longer programs.						n·3	x·1 o·5 n·1	x·4 o·1		
4. Students in our three-year program are held responsible for the same amount of content as students in four-year programs.			x·1 o·2 n·3	x·2 o·2 n·2	x·1 o·2 n·1	x·1				
5. Most students would prefer three-year programs if there were no perceived differences in the type of internships available upon graduation.				n·1	o·2 n·2	x·4 o·2 n·1	o·2 n·1	x·1 n·1		
6. Students appear to be more motivated in a three-year program than in the longer programs.			o·1			o·1	x·2 o·4 n·2	x·3 n·3		
7. Only students of extremely high academic ability can benefit from three-year programs.			o·2 n·1	x·4 o·1 n·1	n·1	n·2	n·1			
8. Students in three-year programs have less opportunity to develop "role identity" than those in four-year programs.		x·2 n·1	x·1 o·5 n·4	n·1	o·1					

	STRONGLY AGREE		AGREE		MILDLY AGREE		MILDLY DISAGREE		DISAGREE	STRONGLY DISAGREE
9. There is a decrease in student-faculty interaction as a result of three-year programs.				x-4 o-1	x-1 o-3 n-3	o-2 n-1	n-1	n-1		
10. Students generally appear to be less prepared for the clinical phase of their education in three-year programs than those from four-year programs.				x-4 o-2 n-2	x-1 o-1 n-2	o-2 n-1	o-1 n-1			
11. Students in three-year programs generally appear to have more difficulty adapting to the clinical environment than four-year students.				n-1	x-2 o-2 n-2	x-3 o-1 n-2	o-3 n-1			
12. Students in three-year programs generally have less exposure to clinical faculty prior to clerkship rotations than students in four-year programs.					x-2 o-1 n-1	x-2 o-2 n-4	o-3	x-1 n-1		
13. There is not sufficient time for students to plan their career goals in three-year programs.			x-2 n-3	x-3 o-3 n-3	o-2		o-1			
14. The elimination or reduction of vacation time puts the three-year program student under a "strain".		x-2 o-1 n-1	x-3 o-2 n-3	o-2 n-2	o-1					
15. There appears to be an informal or unconscious bias against students of three-year programs on the part of:										
a. basic science faculty					x-2 n-1	x-2 o-3	x-1 o-2 n-4	o-1 n-1		
b. clinical faculty					x-2 o-1 n-1	x-3 o-3 n-4	x-1 o-2 n-1	x-1		
c. house staff					n-1	x-2 o-3 n-4	x-2 o-2 n-1	x-1 o-1		
d. those selecting candidates for post-graduate training.				o-1 n-1	x-2 o-2 n-2	x-3 o-2 n-3	o-1			
16. Students from a three-year program are just as likely to become competent physicians as students from four-year programs.			o-1 n-3	x-3 o-3 n-2	o-2	x-2 n-1				
17. In general, the adoption of a three-year program does not substantially increase discipline content.			x-5 o-1 n-5	o-5 n-1						

	STRONGLY AGREE		AGREE		MILDLY AGREE		MILDLY DISAGREE		DISAGREE	STRONGLY DISAGREE
18. The time permitted for student learning and synthesis of information is not altered by the adoption of a three-year program.					o-1	x-1 o-1 n-3	x-3 o-4 n-2	x-1 n-1		
19. A three-year program results in a noticeable decrease in students pursuing combined degree programs (M.D./Ph.D. or Masters).			n-2	x-2 o-1 n-2	x-1 o-3 n-2	o-2	x-1	x-1		
20. In three-year programs, students express more concern that they have virtually no time to do anything else but study than do students in four-year programs.			x-3 o-1 n-3	x-2 o-2 n-2	o-3 n-1					
21. Students appear to be under more "strain" while progressing through three-year programs.		n-1	x-4 o-3 n-3	x-1 o-1 n-1	o-2 n-1					
22. In three-year programs, students have hardly any time available for in-depth study within various disciplines.		n-1	x-5 o-4 n-3	o-1 n-2	o-1					
23. Students of three-year programs appear to be having some problem with retention of information over extended periods of time compared to students of four-year programs.				x-2 o-1 n-1	x-1 o-1 n-2	x-2 o-2 n-1	o-1 n-2	o–1		
24. Faculty generally feel that students from three-year programs are less prepared for the clinical phase of their education than those in four-year programs.			n-1	x-4 o-3 n-2	n-1	x-1 o-2 n-2	o-1			
25. Most students selected this medical school because it offered a three-year program.						x-1 n-3	x-1 o-2 n-3	x-1 o-1	x-2 o-3	
26. In general, adoption of a three-year program does not substantially decrease total hours of discipline content.					x-2 o-1 n-3	x-1 o-3 n-2	o-1	x-2 o-1 n-1		
27. Students in three-year programs are under a "strain" due to the reduction of free time.		n-1	x-4 o-2 n-2	x-1 o-2 n-2	o-2 n-1					
28. The operation of a three-year program results in a more effective utilization of available audio vusual materials (e.g., slides, tapes, video, equipment).						x-1 o-4 n-2	x-4 o-2 n-4			

	STRONGLY AGREE		AGREE		MILDLY AGREE		MILDLY DISAGREE		DISAGREE		STRONGLY DISAGREE
29. Generally, the emergence of interdisciplinary programs (i.e., organ system, body system, approches) is more responsible for curricular content modification than adapting to a three-year program.	___		o-1 n-1 ___	x-2 o-2 n-4	x-2 o-1 n-1 ___	x-1 o-2	___		___		___
30. As a consequence of implementing a three-year program, there is a general decrease in the importance of the basic medical sciences in undergraduate medical education.	___		___	x-2 o-2	x-3 o-1 n-1 ___	o-2 n-5	___	o-1	___		___
31. Students in three-year programs are under a "strain" which is partially caused by what students feel as "too much information in too short a period of time".	___	o-1 n-2	x-5 o-2 n-2 ___	o-2 n-1	o-1 n-1 ___		___		___		___
32. There is more curricular flexibility (i.e.,ease of accommodating students with academic problems, offering of special programs and courses) in a three-year program than in a four-year program.	___		___		___		o-2 ___	o-2 n-1	x-2 o-1 n-4 ___	x-3 o-1 n-1	___
33. Conversion from a four-year to a three-year program would require a departmental re-examination of discipline input to the undergraduate medical education program.	___		x-1 n-3 ___	x-1 o-3 n-2	x-3 o-3 n-1 ___		___		___		___

34. In your own personal opinion, would you prefer teaching in a three-year program or a four-year program?

o-1,n-1 ☐ I would definitely prefer teaching in a four-year program.
x-4,o-2,n-2 x-1,o-2,n-2 ☐ I would somewhat prefer teaching in a four-year program.
o-1,n-1 ☐ I have no greater preference for one over the other.
☐ I would somewhat prefer teaching in a three-year program.
☐ I would definitely prefer teaching in a three-year program.

35. Did you receive your medical education in the Army ASTP or the Navy V-12 program during 1941–1945?

☐ Yes ☐ No

If "yes", did you participate in a three-year medical school program?

☐ Yes ☐ No

36. For Housestaff (Interns/Residents) only:

Did you receive your undergraduate medical education in a three-year medical school program?

☐ Yes ☐ No

APPENDIX D

Individual Response Summary

The following data summary represents the total respondent sample by individual respondents. The data are presented in terms of the percent of the sample giving a particular response. Percentages are based upon the total number of respondents answering the item.

OMB #68-S74084
Expires 02/28/78

CONVERSION PROCESS

The following questions are administered to gather information with regard to the process of conversion from a four-year to a three-year undergraduate medical education curriculum. The questions cover the period from the time of the original idea through the approval of the final decision to convert to a three-year program. All information will be kept confidential and you are requested to be candid in responding to the questions.

1. Where (from what person or group) did the idea originate to consider the adoption of a three-year curriculum? Please check the one most appropriate response from those listed below.

%
9.8 ☐ Central University Administration or University Committee
54.3 ☐ Dean (or Dean's staff) of the Medical School
3.0 ☐ Medical School Executive Committee
14.1 ☐ Medical School Curriculum Committee
0.4 ☐ Medical School Department Chairman
(specify department) ______________________
7.7 ☐ Result of a college faculty retreat or college faculty meeting
-- ☐ Result of a departmental faculty meeting
(specify department) ______________________
0.4 ☐ Office of Medical Education
0.9 ☐ From a student group or organization (i.e., Student Council, SAMA, or Student Government)
9.4 ☐ Other (please specify) ______________________

2. To the best of your recollection, what was the extent of positive influence of each of the reasons listed below on the initial idea to consider the conversion? You are requested to indicate the extent of influence of each reason at the time of the initial idea, not the influence which may have developed during the approval process.

	Reasons	Very Strong Positive Influence %	Strong Positive Influence %	Moderate Positive Influence %	Slight Positive Influence %	No Positive Influence %	Do Not Know %
$\bar{X}=3.43$	To improve curriculum through the re-examination of content being given by each department	8.8	20.4	18.1	17.7	31.0	4.0
$\bar{X}=3.23$	To improve the educational process for students through the identification of "relevant" information (curriculum revision)	12.4	20.8	23.5	13.7	27.0	2.7
$\bar{X}=4.18$	To improve the utilization of faculty time	4.4	6.2	14.2	12.4	57.3	5.3
$\bar{X}=2.40$	To benefit the student in terms of time needed to complete requirements for M.D. degree	30.1	25.8	23.6	10.9	7.9	1.7
$\bar{X}=3.52$	To improve utilization of educational materials and resources	8.9	14.7	23.6	13.8	34.2	4.9
$\bar{X}=3.20$	To lower the cost of undergraduate medical education for the student	15.7	15.7	19.2	21.4	23.1	4.8
$\bar{X}=2.07$	Financial incentives provided by federal legislation	48.0	19.2	9.6	6.1	10.9	6.1

2. cont'd.

	Reasons	Very Strong Positive Influence %	Strong Positive Influence %	Moderate Positive Influence %	Slight Positive Influence %	No Positive Influence %	Do Not Know %
$\bar{X}$=3.29	Financial incentives provided by state legislation	22.0	12.3	6.2	6.6	37.0	15.9
	Other (please specify)						

3. At the time of the initial considerations and/or during the process of approval, was there external influence from any of the following?

	Yes	No	Do Not Know
state medical society	2.2	61.8	36.0
members of state government	18.2	47.1	34.7
members of the central university administration or university committee	32.9	39.5	27.6
members of the federal government	24.6	32.0	43.4

4. During the process of considering the conversion to a three-year curriculum, some persons or groups may have had a noticeable positive or facilitating influence. For each person/group below, indicate the extent to which they exerted a positive or facilitating influence on the conversion to a three-year curriculum.

	Person/Group	Very Strong Positive Influence %	Strong Positive Influence %	Moderate Positive Influence %	Slight Positive Influence %	No Positive Influence %	Do Not Know %
$\bar{X}$=3.46	Central University Administration or University Committee	13.5	14.4	6.5	9.8	34.0	21.9
$\bar{X}$=1.52	Dean of the Medical School (or Dean's staff)	63.5	23.0	6.5	3.0	1.3	2.6
$\bar{X}$=2.90	Medical School Executive Committee	14.1	18.6	21.8	15.9	11.4	18.2
$\bar{X}$=2.36	Medical School Curriculum Committee	30.0	27.3	18.9	6.2	10.6	7.0
$\bar{X}$=4.14	Medical Basic Science Department Chairmen	4.0	4.4	14.6	20.4	48.7	8.0
$\bar{X}$=3.55	Medical Clinical Science Department Chairmen	5.5	12.3	23.6	19.5	25.5	13.6
$\bar{X}$=3.06	Office of Medical Education	17.5	18.0	4.0	3.5	27.0	30.0
$\bar{X}$=3.65	Student Group or Organization (i.e., Student Council, SAMA, or Student Government)	6.0	11.5	13.7	13.7	29.0	26.2
	Other (please specify)						
	____________						
	____________						
	____________	____	____	____	____	____	____

5. During the process of considering the conversion to a three-year curriculum, some persons or groups may have had a noticeable negative or inhibiting influence. For each person or group below, indicate the extent to which they exerted a negative or inhibiting influence on the conversion to a three-year curriculum.

	Person/Group	Very Strong Negative Influence %	Strong Negative Influence %	Moderate Negative Influence %	Slight Negative Influence %	No Negative Influence %	Do Not Know %
$\bar{X}=4.97$	Central University Administration or University Committee	–	–	–	2.3	75.3	22.3
$\bar{X}=4.96$	Dean of the Medical School (or Dean's staff)	0.4	–	–	1.8	91.5	6.3
$\bar{X}=4.47$	Medical School Executive Committee	–	1.4	10.5	19.2	52.5	16.4
$\bar{X}=4.62$	Medical School Curriculum Committee	0.5	14	5.4	17.2	64.3	11.3
$\bar{X}=3.28$	Medical Basic Science Department Chairmen	8.5	16.5	25.0	19.2	19.6	11.2
$\bar{X}=3.96$	Medical Clinical Science Department Chairmen	2.3	6.4	17.4	15.2	33.0	15.6
$\bar{X}=4.92$	Office of Medical Education	–	–	1.0	2.1	66.7	30.2
$\bar{X}=4.80$	Student Group or Organization (i.e., Student Council, SAMA, or Student Government)	–	1.1	1.1	813	56.9	32.6
	Other (please specify)						
	______						
	______						
	______	______	______	______	______	______	______

6. In your judgment, what was the "climate" within the institution during the considerations (process of approval) to adopt a three-year program? Please check all that apply from the choices given below.

%

All Schools

60.3 ☐ The institution was seeking avenues for utilization of federal incentive legislation.

Old and Optional Schools Only

8.8 ☐ The institution was experiencing a period of reduced rate of hiring of new faculty.

18.6 ☐ The hiring of new faculty and available funding for new faculty positions was unchanged from the period two years prior to consideration to convert to a three-year curriculum.

38.1 ☐ The faculty was expressing the need for curricular change.

31.6 ☐ The students were expressing the need for curricular change through their representative student organizations.

New Schools Only

21.0 ☐ The state government was strongly encouraging the adoption of a three-year undergraduate medical education program.

17.6 ☐ The new faculty was expressing the desire for a three-year program.

48.5 ☐ The decision to adopt a three-year program was made before the hiring of new faculty (excluding department chairmen).

☐ Other (please specify) ______________________________

____

Comments regarding responses given above ______________________________

____

____

____

____

7. For each of the persons or groups listed below, indicate the extent or degree of their participation in the decision-making process (from conception of idea to final approval) to convert to a three-year undergraduate medical education curriculum. Please include participation in the development of the conversion recommendation and advising during the decision-making process.

	Person/Group	Very Extensive Participation %	Extensive Participation %	Moderate Participation %	Slight Participation %	No Participation %	Do Not Know %
$\bar{X}$=3.61	Central University Administration or University Committee	11.8	6.9	12.3	16.2	30.9	22.1
$\bar{X}$=1.63	Dean of the Medical School (or Dean's staff)	56.5	27.4	8.3	4.8	0.9	2.2
$\bar{X}$=2.57	Medical School Executive Committee	20.0	21.4	25.9	15.9	4.1	12.7
$\bar{X}$=1.75	Medical School Curriculum Committee	48.9	28.7	10.8	4.0	2.2	5.4
$\bar{X}$=2.69	Medical Basic Science Department Chairmen	14.0	16.2	33.9	19.0	2.7	4.1
$\bar{X}$=2.65	Medical Clinical Science Department Chairmen	11.1	28.1	34.1	14.7	1.8	10.1
$\bar{X}$=2.57	Office of Medical Education	28.6	13.0	6.7	4.1	17.6	30.6
$\bar{X}$=3.58	Student Group or Organization (i.e., Student Council, SAMA, or Student Government)	9.2	8.0	24.1	16.7	14.9	27.0
	Special Faculty Committee (please specify)						

8. To the best of your knowledge, please indicate the order (sequence) of consideration of the recommendation to adopt the three-year curriculum. Please start with the first group that ratified the recommendation and end with the office or committee that made the final approval and thus committed the institution to initiate a three-year program. Start your sequence with #1 for the group that first ratified the recommendation. Indicate only those groups involved in the approval process.

☐ Central University Administration or University Committee
☐ Dean of the Medical School (or Dean's staff)
☐ Medical School Executive Committee
☐ Medical School Curriculum Committee
☐ Medical Basic Science Department Chairmen
☐ Clinical Science Department Chairmen
☐ The Medical Faculty (by total college vote)
☐ Student Group or Organization (i.e., Student Council, SAMA, or Student Government)
☐ Other (please specify) ________________________________

____

9. Please check the one or more units of those below which has final veto power in a curricular decision (i.e., the conversion to a three-year curriculum) within your institution.

%

31.8 ☐ Central University Administration or University Committee
42.6 ☐ Dean of the Medical School (or Dean's staff)
28.5 ☐ Medical School Executive Committee
14.8 ☐ Medical School Curriculum Committee
45.1 ☐ The Medical Faculty (by total college vote)
☐ Other (please specify) ________________________________

____

10. In the process of consideration of the recommendation to change to a three-year curriculum, was it necessary for all medical basic science and clinical science departments to approve the proposal through a vote at a departmental faculty meeting?

6.3% ☐ Yes (100% approval required)   93.7% ☐ No, _____% required (indicate what percentage was required)

11. In the process of final approval (as indicated by the sequence above - Item 8) please indicate those units which, by their veto power could have stopped any further consideration of the recommendation to convert to a three-year curriculum.

%
51.1% ☐ Central University Administration or University Committee
62.8 ☐ Dean of the Medical School (or Dean's staff)
42.6 ☐ Medical School Executive Committee
27.8 ☐ Medical School Curriculum Committee
53.6 ☐ The Medical Faculty (by total college vote)
☐ Other (please specify) ______________________________

12. During the considerations on whether to adopt a three-year curriculum, was it necessary to arrive at a final decision within a specified period of time?

38.0% ☐ Yes   30.6% ☐ No   31.4% ☐ Do Not Know

Regardless of whether a time period was specified, what was the length of time between the initial idea and the time when a final decision was made.

%
15.6 ☐ less than 6 months
29.9 ☐ 6 to 12 months
34.1 ☐ 1 to 1½ years
20.4 ☐ more than 1½ years

$\bar{X}=2.59$

13. Did the medical students participate in any manner in the process of formulating the recommendation to adopt the three-year curriculum?

% 50.0 ☐ Yes   % 19.7 ☐ No   % 24.4 ☐ Do Not Know   % 6.0 ☐ Students were not present.

NEW SCHOOLS ONLY

14. Did medical students participate in any manner in the process of approving the recommendation to adopt the three-year curriculum?

38.7% ☐ Yes 33.0% ☐ No 28.3% ☐ Do Not Know

15. If students did participate in the formulation and/or process of approval to adopt a three-year program, please check the one statement below which best describes their mode of influence.

%
3.5 ☐ Student representation on Medical School Executive Committee
78.1 ☐ Student representation on Medical School Curriculum Committee
- ☐ Student representation in departmental faculty meetings
7.0 ☐ Student organization was included as one of the ratifying bodies for the decision
☐ Other (please specify) ______________________________

16. In retrospect, do you feel the initiation of the considerations of a three-year curriculum in your institution was a means of encouraging faculty to become more involved in the medical education process and concern for curriculum.

%
20.1 ☐ Yes, definitely
29.1 ☐ Yes, to some extent
47.1 ☐ No
- ☐ Do not know

$\bar{X}=2.28$

17. In retrospect, do you feel the initiation of the considerations of a three-year curriculum in your institution was a means of encouraging faculty to revise the undergraduate medical education curriculum?

%
28.4 ☐ Yes, definitely
41.6 ☐ Yes, to some extent
25.8 ☐ No
- ☐ Do not know

$\bar{X}=1.97$

18. In your opinion, did the conversion from the four-year to the three-year curriculum result in a re-examination of the quantity of didactic content for which students were held responsible?

%
44.4 ☐ Yes, definitely
45.5 ☐ Yes, to some extent $\bar{X}=1.66$
10.1 ☐ No
- ☐ Do not know

19. Following the institutional approval to adopt a three-year curriculum, what changes occurred in converting to the new curriculum? Indicate by checking those statements below which apply.

%
76.0 ☐ Reduction of students' free time
60.5 ☐ Reduction in student elective opportunities
92,7 ☐ Decrease of students' vacations
48.5 ☐ Increase in interdisciplinary teaching
73.8 ☐ Reduction of student laboratories
23.6 ☐ Elimination of student laboratories
70.4 ☐ Reduction in time permitted to medical basic science departments in curriculum
34.3 ☐ Reduction in time permitted to clinical science departments in curriculum
21.0 ☐ No change in actual hours of lecture for medical basic sciences
9.4 ☐ No change in actual hours of laboratory for medical basic sciences
25.8 ☐ Reduction in required clinical rotations
- ☐ Other (please specify) ____________________

____

20. At the beginning of the implementation of the three-year curriculum, what was the degree of influence of each of the following objectives?

	Objectives	Very Strong Positive Influence %	Strong Positive Influence %	Moderate Positive Influence %	Slight Positive Influence %	No Positive Influence %	Do Not Know %
$\bar{X}$=2.86	To improve curriculum through the re-examination of content being given by each department	15.7	23.9	23.5	17.4	6.5	3.0
$\bar{X}$=2.82	To improve the educational process for students through the identification of "relevant" information	16.3	27.5	23.6	18.8	11.8	2.2
$\bar{X}$=3.56	To improve the utilization of physical facilities	9.7	13.3	20.4	18.6	34.1	4.0
$\bar{X}$=4.08	To improve the utilization of faculty time	4.9	6.2	13.7	24.3	48.2	2.7
$\bar{X}$=2.30	To benefit the student in terms of time needed to complete requirements for M.D. degree	31.3	28.7	20.0	12.6	5.2	2.2
$\bar{X}$=3.52	To improve utilization of educational materials and resources	8.3	17.1	20.2	19.3	32.5	2.6
$\bar{X}$=3.17	To lower the cost of undergraduate medical education for the student	15.7	16.5	21.7	20.9	21.7	3.5

20. cont'd.

	Objectives	Very Strong Positive Influence %	Strong Positive Influence %	Moderate Positive Influence %	Slight Positive Influence %	No Positive Influence %	Do Not Know %
$\bar{X}=2.00$	Financial incentives provided by federal legislation	49.1	21.3	9.1	8.7	7.4	4.3
$\bar{X}=3.28$	Financial incentives provided by state legislation	21.2	12.6	7.2	7.2	34.7	17.1
	Other (please specify)						

21. Following the institutional approval to adopt a three-year curriculum, in your opinion, which one of the following underwent the most dramatic change in content and time revision?

%

44.3 ☐ Disciplines traditionally offered in the first year (i.e., anatomy, physiology, biochemistry).

34.7 ☐ Disciplines traditionally offered in the second year (i.e., pathology, pharmacology, medical microbiology).

28.0 ☐ Disciplines traditionally offered in the third and fourth years (i.e., clinical service rotations, clinical electives).

14.6 ☐ None of the above segments underwent change.

Comments ______________________________

22. Following the final decision to adopt the three-year curriculum, how much time was provided for departments to accommodate (make necessary changes) to the new program duration? Consider the time from the final approval to the entrance of the first student in the new program?

%
34.0 ☐ less than 6 months
37.6 ☐ 6 to 12 months
21.6 ☐ 1 to 1½ years $\bar{X}$=2.01
6.7 ☐ more than 1½ years

BASIC SCIENCE DEPARTMENT CHAIRMEN

INSTRUCTIONS FOR PROGRAM OPERATION QUESTIONNAIRE

The following questions deal with aspects of the operation of a three-year program. In many instances, the questions require you to compare aspects of the operation of a three-year program with the way those things were in a four-year program. Since the first year of operation of a three-year program may involve requirements which exist simply because of the initial implementation of a new program (e.g., double classes, getting the "bugs" out of a new program, etc.), please do not consider the first year of operation in responding to the questions. Rather, where three-year program characteristics are being sought, consider the second and subsequent years of program operation -- the years of normal operation of the three-year program.

PROGRAM OPERATION

23. Compared to the four-year program, the operation of a three-year program may or may not have affected your department's time spent in various teaching activities for undergraduate medical students. Indicate below, for each activity, your department's time spent in that activity in the operation of a three-year program compared to what it was in the four-year program.

		Department's time spent on this activity was:				
	Activities	Greatly Increased %	Slightly Increased %	Unchanged %	Slightly Decreased %	Greatly Decreased %
$\bar{X}=3.60$	lectures (basic science)	5,7	9.4	32.1	4.5	28.3
$\bar{X}=4.15$	medical student laboratories	5.7	3.8	7.5	35.8	47.2
$\bar{X}=3.42$	department research	1.9	7.5	52.8	22.6	15.1
$\bar{X}=3.57$	individual medical student instruction	7.5	13.2	24.5	24.5	30.2
$\bar{X}=1.72$	time spent in curricular revision and updating (only consider departmental content revision)	49.1	32.1	17.0	1.9	–
$\bar{X}=2.97$	discussion groups	7.7	28.8	36.5	11.5	15.4
$\bar{X}=1.87$	participation on interdisciplinary committees concerned with undergraduate medical education	43.3	28.6	26.4	1.9	–
$\bar{X}=3.78$	faculty free time	1.9	3.8	35.8	32.1	26.4
$\bar{X}=3.64$	vacation time	—	—	57.7	21.2	21.2
	other (please specify)					

24. In your opinion, compared to the four-year program, the operation of the three-year program may or may not have affected the quality of your department's various teaching activities for medical students. Please indicate below, for each activity, your opinion of the quality of your department's teaching activities in the three-year program compared to what it was in the four-year program.

		The quality of this activity was:				
	Activities	Greatly Increased %	Somewhat Increased %	Unchanged %	Somewhat Decreased %	Greatly Decreased %
$\bar{X}=3.24$	lectures (basic science)	7.8	23.5	25.5	23.5	29.6
$\bar{X}=3.86$	medical student laboratories	–	14.3	22.4	26.5	36.7
$\bar{X}=3.27$	department research	3.8	9.6	57.7	13.5	15.4
$\bar{X}=3.25$	individual medical student instruction	3.8	26.9	28.8	21.2	19.2
$\bar{X}=3.25$	discussion groups	3.9	23.5	35.3	17.6	19.6
	other (please specify) ______________					
	______________	______	______	______	______	______

25. Your department's teaching responsibilities in the conduct of a three-year program may or may not require different numbers for different assignment patterns of faculty, staff, and graduate assistants as were used under the four-year program. Check the appropriate responses below for each personnel category to indicate what changes, if any, were required.

		The three-year program requires:				
	Category of Personnel	Considerably More %	Somewhat More %	The Same %	Somewhat Less %	Considerably Less %
$\bar{X}=2.42$	Senior faculty (Professor & Associate Professor)	18.9	32.1	39.6	7.5	1.9
$\bar{X}=2.32$	Junior faculty (Assistant Professor & Instructor)	24.5	26.4	41.5	7.5	–
$\bar{X}=3.11$	Graduate Assistants	11.4	11.4	50.0	9.1	18.2

25. cont'd.

		The three-year program requires:				
	Category of Personnel	Considerably More	Somewhat More	The Same	Somewhat Less	Considerably Less
		%	%	%	%	%
$\bar{X}=2.25$	Departmental Administrative & Clerical staff	23.1	28.8	48.1	–	–
	Other (please specify)					

26. The above changes may or may not have been entirely necessitated by the changeover to a three-year curriculum. In the spaces below, please indicate the extent to which the above changes in personnel were necessitated by the program change rather than a general increase in enrollment.

		The above changes for each category were necessitated by the three-year program:				
	Category of Personnel	Entirely	To A Large Extent	Somewhat	To A Small Extent	Not At All
		%	%	%	%	%
$\bar{X}=2.89$	Senior faculty	13.0	34.8	26.1	2.2	23.9
$\bar{X}=2.87$	Junior faculty	15.2	32.6	26.1	2.2	23.9
$\bar{X}=3.22$	Graduate Assistants	13.9	25.0	19.4	8.3	33.3
$\bar{X}=2.96$	Departmental Administrative & Clerical staff	9.1	40.9	18.2	9.1	22.7
	Other (please specify)					

27. Excluding your graduate program teaching responsibilities, does your department have teaching responsibilities in curricula other than undergraduate medical education (e.g., dentistry, nursing, allied medical professions, and other university undergraduate programs)?

67.3% ☐ Yes   32.7% ☐ No

28. For each statement below, please indicate the extent to which you agree or disagree with the statement by checking the appropriate space to the right of the statement. Please respond to each statement.

		Strongly Agree %	Mildly Agree %	Mildly Disagree %	Strongly Disagree %
$\bar{X}=3.46$	The operation of a three- year program has made it easier to assign and distribute departmental teaching responsibilities for the medical curriculum in my department.	1.9	9.6	28.8	59.6
$\bar{X}=2.06$	The operation of a three-year program has resulted in changes in instructional methodology by departmental faculty.	39.6	34.0	7.5	18.9
$\bar{X}=2.23$	The operation of a three-year program has resulted in faculty teaching assignment conflicts with other departmental teaching responsibilities in dentistry, nursing, allied medical professions, etc.	34.1	31.8	11.4	22.7
$\bar{X}=3.33$	The operation of a three-year program has facilitated the arrangement of dedicated research time for my departmental faculty.	3.8	15.4	25.0	55.8
$\bar{X}=1.96$	The conversion to a three-year program has resulted in a review of curricular content by faculty in my department.	35.8	43.4	9.4	11.3
$\bar{X}=1.60$	The operation of a three-year program has made it more difficult to arrange special tutorial sessions for students that experience irregular rates of progress.	63.5	15.4	19.2	1.9
$\bar{X}=1.48$	The operation of a three-year program has made it more difficult to arrange make-up courses for medical students who do not pass the discipline.	71.2	13.5	11.5	3.8

28. cont'd.

		Strongly Agree %	Mildly Agree %	Mildly Disagree %	Strongly Disagree %
$\bar{X}$=3.08	The operation of a three-year program has led to an increase in the department's influence in undergraduate medical education curricular affairs.	7.5	20.8	28.3	43.4
$\bar{X}$=2.21	The operation of a three-year program has led to a decrease in the department's influence in undergraduate medical education curricular affairs	37.7	17.0	32.1	13.2

29. Were additional faculty positions made available to your department because of conversion to a three-year program?

34.0% ☐ Yes 66.0% ☐ No

30. Do you feel that additional faculty positions should have been made available to your department because of the conversion to a three-year program?

52.9% ☐ Yes 47.1% ☐ No

31. Compared to the four-year program, the operation of a three-year program may or may not have altered the effectiveness with which available facilities and space are utilized. Indicate below, for each category of facilities/space, the effectiveness with which they are utilized in the three-year program operation compared to what it was in the four-year program.

		In the three-year program operation, this department's utilization of this has been:				
	Facilities/Space	Much More Effective %	Somewhat More Effective %	Unchanged %	Somewhat Less Effective %	Much Less Effective %
$\bar{X}$=2.57	student classroom lecture space	5.9	47.1	31.4	15.7	–
$\bar{X}$=3.02	student laboratory space	10.4	25.0	33.3	14.6	16.7
$\bar{X}$=2.94	space for small group discussions	5.9	27.5	37.3	25.5	3.9

31. cont'd.

	Facilities/Space	In the three-year program operation, this department's utilization of this has been: Much More Effective %	Somewhat More Effective %	Unchanged %	Somewhat Less Effective %	Much Less Effective %
$\bar{X}$=2.86	assigned student study space (desk)	10.2	24.5	40.8	18.4	6.1
	other (please specify)					
	________________					
	________________	____	____	____	____	____

32. In the present three-year curriculum, how do you feel your department's proportion of the curriculum compares to the proportion the department should have to be optimally effective in the undergraduate medical student's education?

This department's proportion should be:

%

17.6 ☐ Very much greater than it is now.

17.6 ☐ Much greater than it is now.

33.3 ☐ Somewhat greater than it is now. $\bar{X}$=2.78

31.4 ☐ About the same as it is now.

– ☐ Somewhat less than it is now.

– ☐ Much less than it is now.

– ☐ Very much less than it is now.

33. In the three-year program, do you feel that the curriculum time is properly distributed between basic science and clinical science?

32.7% ☐ Yes 67.3% ☐ No

34. In the four-year program, did you feel that the curriculum time was properly distributed between basic science and clinical science?

80.4% ☐ Yes 19.6% ☐ No

35. Indicate, for each activity below, what department time changes, if any, occurred in the second and subsequent years of three-year program operation compared to the first or initial year of three-year program operation.

		Department's time in this activity was:				
	Activities	Greatly Increased %	Somewhat Increased %	Unchanged %	Somewhat Decreased %	Greatly Decreased %
$\bar{X}=2.94$	lectures	6.3	25.0	43.8	18.8	6.3
$\bar{X}=3.28$	medical student laboratories	2.2	17.4	47.8	15.2	17.4
$\bar{X}=3.19$	department research	2.1	10.4	66.7	8.3	12.5
$\bar{X}=3.06$	individual instruction	2.1	25.0	50.0	10.4	12.5
$\bar{X}=2.94$	discussion/ conference groups	12.5	16.7	47.9	10.4	12.5
$\bar{X}=3.50$	faculty free time	–	4.2	54.2	29.2	12.5
$\bar{X}=3.19$	vacation time	–	–	63.8	19.1	17.0
	other (please specify)					

36. During the preparation for the first year of the three-year program, you, as a department chairman, may have anticipated difficulty in the administration of various department teaching activities in the new three-year program. Please indicate below, the activities which, prior to the first year of operation, you thought would be difficult to accommodate.

%

31.3 ☐ Faculty staffing of discipline lectures

27.1 ☐ Faculty staffing of medical student laboratories

54.2 ☐ Arrangement of time for individual student instruction

56.3 ☐ Arrangement of time for student-faculty discussion/conference groups

52.1 ☐ Arrangement of faculty vacation time

☐ Other (please specify) ______________________

37. At the end of the first year of three-year program operation, you may or may not have found that some of the department's teaching activities actually were difficult to administer in the three-year program. By checking those that apply, please indicate below the activities which were difficult to administer in the three-year program.

%

30.4 ☐ Faculty staffing of discipline lectures

26.7 ☐ Faculty staffing of medical student laboratories

62.2 ☐ Arrangement of time for individual student instruction

53.3 ☐ Arrangement of time for student-faculty discussion/conference groups

46.7 ☐ Arrangement of faculty vacation time

☐ Other (please specify) ______________________________

38. What is your discipline? ______________________________

39. Were you at this institution when the three-year program was being considered for adoption?

73.6% ☐ Yes 26.4% ☐ No

CLINICAL SCIENCE DEPARTMENT CHAIRMEN

INSTRUCTIONS FOR PROGRAM OPERATION QUESTIONNAIRE

The following questions deal with aspects of the operation of a three-year program. In many instances, the questions require you to compare aspects of the operation of a three-year program with the way those things were in a four-year program. Since the first year of operation of a three-year program may involve requirements which exist simply because of the initial implementation of a new program (e.g., double classes, getting the "bugs" out of a new program, etc.), please do not consider the first year of operation in responding to the questions. Rather, where three-year program characteristics are being sought, consider the second and subsequent years of program operation -- the years of normal operation of the three-year program.

PROGRAM OPERATION

23. Compared to the four-year program, the operation of a three-year program may or may not have affected the amount of time required by your department in various activities regarding the teaching of medical students during their rotations on your clinical service (ward rotations). Please indicate below, to the best of your recollection, your department's time spent in each activity in the operation of a three-year program compared to what it was in the four-year program.

		Department's time spent in the activity has:				
	Activities	Greatly Increased %	Somewhat Increased %	Not Changed %	Somewhat Decreased %	Greatly Decreased %
$\bar{X}$=2.22	Faculty time spent in teaching students	27.3	32.7	30.9	9.1	–
$\bar{X}$=2.70	House staff time in teaching medical students	3.8	32.1	56.6	5.7	1.9
$\bar{X}$=2.89	Didactic sessions for medical students	11.1	24.1	37.0	20.4	7.4
$\bar{X}$=2.87	Teaching of physical diagnosis skills	7.5	30.2	34.0	24.5	3.8
$\bar{X}$=2.46	Faculty participation in preclinical curriculum, i.e., lectures, laboratories	16.7	37.0	33.3	9.3	3.7
$\bar{X}$=1.96	Time spent in curricular revision and updating (only consider departmental content revision)	34.0	35.8	30.2	–	–
$\bar{X}$=3.15	Time for faculty to render patient service	–	14.5	60.0	21.8	3.6

23. cont'd.

	Activities	Department's time spent in the activity has: Greatly Increased %	Somewhat Increased %	Not Changed %	Somewhat Decreased %	Greatly Decreased %
$\bar{X}$=2.06	Participation on interdisciplinary committees concerned with undergraduate medical education	18.5	59.3	20.4	1.9	–
$\bar{X}$=3.78	Time for faculty to conduct research	–	–	36.4	49.1	14.5
	Other (please specify) ______ ______ ______	______	______	______	______	______

24. In your opinion, compared to the four-year program, the operation of the three-year program may or may not have affected the quality of your department's various teaching activities for medical students. Please indicate below, for each activity, your opinion of the quality of your department's teaching activities in the three-year program compared to what it was in the four-year program.

	Activities	The quality of this activity has: Greatly Increased %	Somewhat Increased %	Not Changed %	Somewhat Decreased %	Greatly Decreased %
$\bar{X}$=2.89	Faculty teaching of students	5.6	25.9	46.3	18.5	3.7
$\bar{X}$=2.96	House staff teaching of students	–	20.4	64.8	13.0	1.9
$\bar{X}$=3.07	Didactic sessions for medical students	1.9	14.8	59.3	22.2	1.9
$\bar{X}$=3.14	Teaching of physical diagnosis skills	3.9	13.7	52.9	23.5	5.9

24. cont'd.

	Activities	Greatly Increased	Somewhat Increased	Not Changed	Somewhat Decreased	Greatly Decreased
		The quality of this activity has:				
		%	%	%	%	%
$\bar{X}$=2.80	Faculty participation in preclinical curriculum, i.e., lectures, laboratories	9.3	27.8	42.6	14.8	5.6
$\bar{X}$=2.94	Time spent by faculty in rendering patient service	1.9	16.7	68.5	11.1	1.9
$\bar{X}$=3.65	Time for faculty to conduct research	–	–	44.4	46.3	9.3
	Other (please specify)					

25. Your department's teaching responsibilities in the conduct of a three-year program may or may not require different numbers of teaching faculty than was the case in the four-year program. Check the appropriate responses below for each personnel category to indicate the changes, if any, which were required for the operation of a three-year program.

	Category of Personnel	Considerably More	Somewhat More	The Same	Somewhat Less	Considerably Less
		The three-year program requires:				
		%	%	%	%	%
$\bar{X}$=2.58	Senior faculty (Professor & Associate Professor)	5.7	37.7	50.9	3.8	1.9
$\bar{X}$=2.38	Junior faculty (Assistant Professor & Instructor)	7.5	50.9	37.7	3.8	–
$\bar{X}$=2.60	House staff	5 7	24.5	66.0	3.8	–
$\bar{X}$=2.37	Departmental Administrative & Clerical staff	7.7	50.0	40.4	1.9	–
	Other (please specify)					

26. Compared to the four-year program, the operation of a three-year program may or may not have affected the utilization of different categories of teaching faculty within your department. Please indicate below, for each personnel category, the faculty requirements of the three-year program operation compared to what it was in the four-year program.

		The three-year program requires:				
	Category of Personnel	Considerably More %	Somewhat More %	No Change %	Somewhat Less %	Considerably Less %
$\bar{X}$=2.50	Strict full-time in medical school	8.0	40.0	48.0	2.0	2.0
$\bar{X}$=2.66	Geographic full-time in medical school	4.3	31.9	59.6	2.1	2.1
$\bar{X}$=2.66	Part-time salaried in medical school	6.4	23.4	68.1	2.1	–
$\bar{X}$=2.60	Non-salaried	12.0	20.0	64.0	4.0	–
$\bar{X}$=2.68	Strict full-time in affiliated institution*	6.8	25.0	63.6	2.3	2.3
$\bar{X}$=2.58	Geographic full-time in affiliated institution*	4;4	33.3	62.2	–	–
$\bar{X}$=2.64	Part-time salaried in affiliated institution*	9.5	16.7	73.8	–	–

* (Usually teaching hospitals)

27. The above changes may or may not have been entirely necessitated by the change to a three-year program. In the spaces below, please indicate the extent to which the above changes in personnel were necessitated by the program change rather than a general increase in enrollment.

		The above changes for each category were necessitated by the three-year program:				
	Category of Personnel	Entirely %	To A Large Extent %	Somewhat %	To a Small Extent %	Not At All %
$\bar{X}$=3.54	Strict full-time in medical school	4.9	12.2	36.6	17.1	29.3

27. cont'd.

The above changes for each category were necessitated by the three-year program:

	Category of Personnel	Entirely %	To A Large Extent %	Somewhat %	To A Small Extent %	Not At All %
$\bar{X}$=3.90	Geographic full-time in medical school	2.6	7.7	33.3	10.3	46.2
$\bar{X}$=3.95	Part-time salaried in medical school	2.6	12.8	20.5	15.4	48.7
$\bar{X}$=3.65	Non-salaried	5.0	20.0	22.5	10.0	42.5
$\bar{X}$=3.95	Strict full-time in affiliated institution*	–	15.8	21.1	15.8	47.4
$\bar{X}$=4.00	Geographic full-time in affiliated institution*	–	11.4	25.7	14.3	48.6
$\bar{X}$=3.94	Part-time salaried in affiliated institution*	–	14.7	23.5	14.7	47.1

* (Usually teaching hospitals)

28. As a result of the conversion to a three-year undergraduate program, what changes, if any, occurred in the proportion of the medical student's clinical education for which your department is responsible?

		Greatly Increased %	Somewhat Increased %	Remained Same %	Somewhat Decreased %	Greatly Decreased %
$\bar{X}$=3.15	Required rotation time	1.9	15.1	50.9	30.2	1.9
$\bar{X}$=3.32	Clinical electives	5.7	18.9	28.3	32.1	15.1
	Other (please specify)					
	______________					
	______________	_____	_____	_____	_____	_____

29. Did the conversion to a three-year program result in any changes in the utilization of teaching patients for undergraduate medical education? Do not consider changes caused only by increased enrollment. Please indicate your responses by checking the appropriate spaces below.

		Three-year program conversion resulted in:				
		Much More Utilization %	Somewhat More Utilization %	No Change %	Somewhat Less Utilization %	Much Less Utilization %
$\bar{X}$=2.67	In-patients	11.8	21.6	56.9	7.8	2.0
$\bar{X}$=2.89	Out-patients	7.5	18.9	52.8	18.9	1.9

30. Please check below what affect, if any, the operation of a three-year undergraduate medical curriculum has had upon your total department's proportion of time devoted to education, service, and research compared to what it was for the four-year program.

		Department's proportion of time has:				
		Greatly Increased %	Somewhat Increased %	Not Changed %	Somewhat Decreased %	Greatly Decreased %
$\bar{X}$=2.09	Education	24.1	48.1	22.2	5.6	–
$\bar{X}$=2.78	Service	1.9	25.9	66.7	3.7	1.9
$\bar{X}$=3.70	Research	–	5.6	37.0	38.9	18.5

31. The following two questions ask your perceptions of certain aspects of the student's level of preparation at two different times during the clinical portion of their medical education: A) upon entry to their first clinical service rotation following the completion of their preclinical training and B) after approximately six months of clinical education. In each instance you are requested to compare three-year program students with those that formerly entered your service when your institution conducted a four-year program. Please indicate your opinions by checking the appropriate response for each statement below.

Compared to previous four-year program students,
the three-year program students are:

		Much Better Prepared	Better Prepared	About The Same	Less Well Prepared	Much Less Well Prepared
	A. Perceptions when student enters first clinical rotation	%	%	%	%	%
$\bar{X}=3.46$	Ability to take patient history	1.9	7.7	38.5	46.2	5.8
$\bar{X}=3.56$	Ability to conduct physical examinations	–	7.7	38.5	44.2	9.6
$\bar{X}=3.71$	Ability to formulate a differential diagnosis	–	3.8	30.8	55.8	9.6
$\bar{X}=3.73$	Ability to formulate therapeutic plan	–	1.9	36.5	48.1	13.5
$\bar{X}=3.64$	Overall knowledge of basic science	–	1.9	40.4	50.0	7.7
$\bar{X}=3.65$	Ability of student to adapt basic science information to clinical setting	–	7.7	28.8	53.8	9.6
$\bar{X}=3.71$	Ability of student to synthesize (integrate) knowledge in clinical setting	–	1.9	32.7	57.7	7.7
	Other (please specify)					
	______________					
	______________	______	______	______	______	______

31. cont'd.

		Compared to previous four-year program students, the three-year program students are: Much Better Prepared	Better Prepared	About The Same	Less Well Prepared	Much Less Well Prepared
	B. Perceptions of students after approximately six months of clinical service education	%	%	%	%	%
$\bar{X}$=3.17	Ability to take patient history	–	7.5	67.9	24.5	–
$\bar{X}$=3.23	Ability to conduct physical examinations	–	1.9	75.5	20.8	1.9
$\bar{X}$=3.28	Ability to formulate a differential diagnosis	–	3.8	67.9	24.5	3.8
$\bar{X}$=3.30	Ability to formulate therapeutic plan	–	5.7	62.3	28.3	3.8
$\bar{X}$=3.51	Overall knowledge of basic science	–	5.7	43.4	45.3	5.7
$\bar{X}$=3.40	Ability of student to adapt basic science information to clinical setting	–	9.4	45.3	41.5	3.8
$\bar{X}$=3.38	Ability of student to synthesize (integrate) knowledge in clinical setting	–	3.8	62.3	26.4	7.5
	Other (please specify)					

32. As a clinical department chairman involved in the selection of interns and residents for your specialty at your institution, do you feel that the pool of applicants graduating from three-year programs are as competitive for these positions as those students graduating from four-year programs?

%

28.6 ☐ Yes, definitely

16.1 ☐ Yes, to some extent

7.1 ☐ Uncertain

26.8 ☐ No, not entirely

21.4 ☐ No, definitely not

33. Do you feel that, generally across the country, three-year program graduates are as competitive for internships and residencies in your specialty as graduates of four-year programs?

%

19.6 ☐ Yes, definitely

17.9 ☐ Yes, to some extent

5.4 ☐ Uncertain

35.7 ☐ No, not entirely

21.4 ☐ No, definitely not

If answer is "no", please indicate why by checking the appropriate statements below.

%

81.8 ☐ Four-year program students tend to be more mature.

63.6 ☐ Four-year program students possess more clinical experience.

69.7 ☐ Four-year program students tend to possess more depth in their knowledge.

33.3 ☐ Four-year program students have demonstrated better performance in post-graduate education.

☐ Other (please specify) ____________________

____

____

34. Regarding the availability of internships/residencies for graduates of three-year medical programs, do you feel there is a loss in necessary undergraduate clinical experience by three-year graduates?

%
23.2 ☐ Yes, very much so
44.6 ☐ Yes, to some extent
12.5 ☐ Uncertain $\bar{X}=2.30$
17.9 ☐ No, not usually
1.8 ☐ No, definitely not

If "yes", is this lessening of experience critical in the student's competitiveness for "quality" positions following graduation from medical school?

%
15.0 ☐ Yes, very much so
47.5 ☐ Yes, to some extent
10.0 ☐ Uncertain $\bar{X}=2.50$
27.5 ☐ No, not usually
– ☐ No, definitely not

35. In your opinion, if there is a loss, can this loss be regained relatively easily by the student during the first portion of his internship and/or residency?

%
34.8 ☐ Yes, very definitely
41.3 ☐ Yes, to some extent
6.5 ☐ Uncertain $\bar{X}=2.11$
13.0 ☐ No, not necessarily
4.3 ☐ No, definitely not

36. Do you, as chairman in the selection of interns/residents, feel you have less information on which to judge the quality of an applicant from a three-year program compared to an applicant from a four-year program?

%
32.7 ☐ Yes, very definitely
30.9 ☐ Yes, to some extent
5.5 ☐ Uncertain
25.5 ☐ No, not necessarily
5.5 ☐ No, definitely not

$\bar{X}=2.40$

37. As a faculty member, compared to four-year students, do you feel you have sufficient information about the three-year program student's performance when requested to write recommendations for post-graduate training?

%
32.1 ☐ Yes, very definitely
33.9 ☐ Yes, to some extent
8.9 ☐ Uncertain
21.4 ☐ No, not necessarily
3.6 ☐ No, definitely not

$\bar{X}=2.30$

38. Please indicate your specialty. ______________________________

39. Were you at this institution when the three-year program was being considered for adoption?

60.0% ☐ Yes 40.0% ☐ No

BASIC SCIENCE FACULTY

INSTRUCTIONS FOR PROGRAM OPERATION QUESTIONNAIRE

The following questions deal with aspects of the operation of a three-year program. In many instances, the questions require you to compare aspects of the operation of a three-year program with the way those things were in a four-year program. Since the first year of operation of a three-year program may involve requirements which exist simply because of the initial implementation of a new program (e.g., double classes, getting the "bugs" out of a new program, etc.), please do not consider the first year of operation in responding to the questions. Rather, where three-year program characteristics are being sought, consider the second and subsequent years of program operation -- the years of normal operation of the three-year program.

OMB #68-S74086
Expires 02/28/78

PROGRAM OPERATION

1. For each activity below, please indicate the extent to which the operation of a three-year undergraduate medical education curriculum altered the amount of your personal time spent at the activity compared to the time spent in that activity during the operation of the four-year program.

	Activity	Greatly Increased %	Somewhat Increased %	Was Not Changed %	Somewhat Decreased %	Greatly Decreased %
$\bar{X}=3.09$	Number of lectures	5.6	16.2	46.2	27.5	4.4
$\bar{X}=3.82$	Student laboratory teaching	1.9	9.6	26.8	28.7	33.1
$\bar{X}=3.03$	Scheduled student group discussions	12.0	15.8	39.9	21.5	10.8
$\bar{X}=2.83$	Individual student tutorial sessions	15.8	19.6	39.2	16.5	8.9
X= $\bar{X}=3.35$	Personal research activities (proposal writing & participation)	1.2	6.8	60.9	18.0	13.0
$\bar{X}=3.40$	Dedicated blocks of research time (no assigned teaching during this period)	1.9	8.7	51.6	23.0	14.9
$\bar{X}=2.02$	Time spent on committees involved with medical student affairs (i.e., evaluation, curricular logistics)	33.5	33.5	30.4	1.9	0.6
$\bar{X}=1.93$	Time spent in curricular revision & updating (only consider departmental content revision)	32.1	43.8	23.5	0.6	–
$\bar{X}=2.48$	Time spent in your personal preparation for lectures, student discussions, & laboratory sessions	14.8	27.8	52.5	4.3	0.6

1. cont'd.

	Activity	Greatly Increased %	Somewhat Increased %	Was Not Changed %	Somewhat Decreased %	Greatly Decreased %
X=2.23	Your participation on interdisciplinary committees concerned with undergraduate medical education	27.3	26.1	44.1	1.2	1.2
X̄=2.83	Teaching departmental courses to non-medical students	7.5	16.8	66.5	4.3	5.0
X̄=2.92	Professional activities (e.g., associations, professional association committee membership, consultation, etc.)	2.5	10.7	79.9	5.7	1.3
X̄=3.56	Personal free time	–	2.5	52.2	33.5	11.8
X̄=3.45	Personal vacation time	–	–	69.4	16.2	14.4
	Other (please specify) ________ ________ ________					

2. What impact has the participation in a three-year curriculum had upon your research productivity - the extent to which you are able to obtain and conduct funded research?

%

8.1 ☐ Has greatly decreased my research productivity.

X̄=2.65 23.1 ☐ Has somewhat decreased my research productivity.

65.0 ☐ Has neither decreased nor increased my research productivity.

3.1 ☐ Has somewhat increased my research productivity.

0.6 ☐ Has greatly increased my research productivity.

3. Do you have, within your teaching obligations in the three-year program, sufficient continuous research time?

63.7% ☐ Yes 36.2% ☐ No

4. When your institution operated a four-year program, did you then have sufficient continuous research time within your teaching obligations?

82.2% ☐ Yes 17.8% ☐ No

5. Did the conversion to a three-year program cause you to redistribute your periods of research activity?

56.0% ☐ Yes 44.0% ☐ No

If "yes", did the redistribution facilitate, inhibit, or have no effect on your research activity?

%

3.2 ☐ Facilitated

49.5 ☐ Had no effect $\bar{X}=2.44$

47.4 ☐ Inhibited

6. Did the process of conversion and subsequent teaching activity in the three-year program provide increased opportunity to interact with faculty from other departments?

44.4% ☐ Yes 55.6% ☐ No

If "yes", has this been a positive effect of the curriculum change?

85.1% ☐ Yes 14.9% ☐ No

If "yes", has the interdepartmental interaction initiated or facilitated any interdisciplinary basic research efforts?

22.2% ☐ Yes 77.8% ☐ No

7. Did the conversion to the three-year program bring about any changes in your personal instructional methodology?

58.4% ☐ Yes 41.6% ☐ No

7. cont'd.

If "yes", how would you evaluate the impact of the change upon your teaching effectiveness?

My teaching effectiveness was:

%

12.7 ☐ Greatly increased

26.5 ☐ Somewhat increased $\bar{X}$=3.00

19.6 ☐ Unchanged

30.4 ☐ Somewhat decreased

10.8 ☐ Greatly decreased

8. When you participated in your institution's four-year program, did you write, and distribute to students, instructional objectives for your subject area of responsibility? (Please do not consider course or lecture outlines as instructional objectives.)

26.6% ☐ Yes 73.4% ☐ No

9. Do you presently write, and distribute to students, instructional objectives for your subject area of responsibility? (Again, please do not consider course or lecture outlines as instructional objectives.)

56.1% ☐ Yes 43.9% ☐ No

If "yes", did the process of converting to a three-year program initiate your utilization of instructional objectives?

40.4% ☐ Yes 59.6% ☐ No

10. Do you feel that the content within your discipline for which students are held responsible in the three-year program has significantly changed from that which was required in the four-year program?

%

18.9 ☐ Very much changed

34.0 ☐ Somewhat changed $\bar{X}$=2.53

22.6 ☐ Slightly changed

24.5 ☐ Not changed at all

11. Do you feel that the conversion to a three-year program resulted in a subject matter compression (same content in a shorter period of time) in your discipline?

77.6% ☐ Yes 22.4% ☐ No

12. Do you feel that the conversion to a three-year program resulted in a rather extensive departmental faculty revision of content to accommodate the new program duration?

%

23.9 ☐ Yes, very much so

40.3 ☐ Yes, somewhat $\bar{x}=2.12$

35.8 ☐ No

13. As a result of the conversion to a three-year program has laboratory teaching in your discipline become more demonstration?

56.9% ☐ Yes 43.1% ☐ No

14. In general, would you consider that three-year program students who complete studies in your discipline are as well prepared for their clinical education as four-year program students?

%

11.9 ☐ Yes, very definitely

22.5 ☐ Yes, generally $\bar{x}=2.82$

37.5 ☐ No, not necessarily

28.1 ☐ No, definitely not

15. In general, would you consider that three-year program students who complete studies in your discipline are as well prepared in your discipline as four-year program students?

%

8.1 ☐ Yes, very definitely

23.1 ☐ Yes, generally $\bar{x}=2.95$

34.4 ☐ No, not necessarily

34.4 ☐ No, definitely not

16. In preparation for the presentation of your subject areas (lectures) to the three-year program students, did you increase the utilization of associated learning resources (i.e., read-slide programs, movies, video tapes, etc.) compared to what it was for four-year program students?

43.9% ☐ Yes 56.1% ☐ No

16. cont'd.

If "yes", which of the following best describes your reasons for the increased utilization of associated learning materials?

☐ Provided opportunity for presentation of material that could not be covered in allotted lecture/discussion time.

☐ Provided opportunity to clarify concepts presented in lecture.

☐ Revisions in presentations required to accommodate three-year conversion necessitated the use of associated learning materials.

☐ Other (please specify) ______________________________

____

Did you prepare and develop your own self-instructional programs?

47.5% ☐ Yes 35.8% ☐ No 16.7% ☐ Not Used

17. What is your discipline? ______________________________

What is your rank?

%
29.0 ☐ Professor
32.6 ☐ Associate Professor
37.1 ☐ Assistant Professor
0.4 ☐ Instructor
0.6 ☐ Other (please specify) ______________________________

18. Were you at this institution when the three-year program was being considered for adoption?

94.0% ☐ Yes 6.0% ☐ No

CLINICAL SCIENCE FACULTY

INSTRUCTIONS FOR PROGRAM OPERATION QUESTIONNAIRE

The following questions deal with aspects of the operation of a three-year program. In many instances, the questions require you to compare aspects of the operation of a three-year program with the way those things were in a four-year program. Since the first year of operation of a three-year program may involve requirements which exist simply because of the initial implementation of a new program (e.g., double classes, getting the "bugs" out of a new program, etc.), please do not consider the first year of operation in responding to the questions. Rather, where three-year program characteristics are being sought, consider the second and subsequent years of program operation -- the years of normal operation of the three-year program.

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Expires 02/28/78

PROGRAM OPERATION

1. For each activity listed below, please indicate the extent to which the operation of a three-year curriculum altered the amount of your personal time spent at the activity compared to the time spent in that activity during the operation of the four-year program.

	Activity	Greatly Increased	Somewhat Increased	Unchanged	Somewhat Decreased	Greatly Decreased
		%	%	%	%	%
$\bar{x}$=2.82	Lecture time in preclinical curriculum	13.9	17.5	46.7	16.1	5.8
$\bar{x}$=2.93	Teaching of didactic sessions with students during ward rotations	5.6	16.9	60.6	12.7	4.2
$\bar{x}$=2.98	Conduct of group discussion sessions with students during ward rotations	2.8	17.0	63.1	13.5	3.5
$\bar{x}$=2.89	Individual tutorial sessions	4.9	21.8	57.7	10.6	4.9
$\bar{x}$=2.84	Teaching of history taking skills	7.9	229	52.1	12.1	5.0
$\bar{x}$=2.89	Time spent in rendering patient services	5.7	14.9	66.7	9.9	2.8
$\bar{x}$=3.58	Dedicated block of research time (no assigned teaching during this period)	--	1.5	55.6	26.3	16.5
$\bar{x}$=2.79	Teaching of physical examination skills	9.3	24.3	48.6	14.3	3.6
$\bar{x}$=3.56	Personal research activities (proposal writing & participation)	0.7	2.9	51.8	28.8	15.8

1. cont'd.

	Activity	Greatly Increased	Somewhat Increased	Unchanged	Somewhat Decreased	Greatly Decreased
		%	%	%	%	%
$\bar{x}=2.23$	Time spent on committees involved with medical student affairs (i.e., evaluation, curricular logistics	20.6	40.4	36.2	1.4	1.4
$\bar{x}=2.21$	Time spent in curriculum revision & updating (only consider departmental content revision)	25.2	38.5	30.8	1.4	4.2
$\bar{x}=2.58$	Time spent in your personal preparation for lectures, student discussions, & laboratory sessions	7.0	33.6	53.8	5.6	--
$\bar{x}=2.43$	Your participation on interdisciplinary committees concerned with undergraduate medical education	14.0	34.3	48.3	2.1	1.4
$\bar{x}=2.96$	Professional activities (e.g., associations, professional association committee membership, consultation, etc.)	2.2	7.9	81.3	8.6	--
$\bar{x}=3.62$	Personal free time	--	0.7	51.7	32.2	15.4
$\bar{x}=3.34$	Personal vacation time	--	0.7	73.4	17.5	8.4
	Other (please specify)					
	______					
	______	____	____	____	____	____

2. Does the participation in a three-year program involve any changes in the utilization of teaching patients for undergraduate medical education compared to what it was in the four-year program? Do not consider changes caused only by increased enrollment.

		Three-year program involves:				
		Much More Utilization %	Somewhat More Utilization %	No Change %	Somewhat Less Utilization %	Much Less Utilization %
$\bar{x}$=2.62	In-patients	13.4	22.1	55.0	8.1	1.3
$\bar{x}$=2.90	Out-patients	6.8	24.0	47.9	14.4	6.8

3. Did the process of conversion and subsequent teaching activity in the three-year program provide increased opportunity to interact with faculty from other departments?

37.3% ☐ Yes 62.7% ☐ No

If "yes", has this been a positive effect of the curriculum change?

90.7% ☐ Yes 9.3% ☐ No

If "yes", has the interdepartmental interaction initiated or facilitated any interdisciplinary basic research efforts?

42.3% ☐ Yes 57.7% ☐ No

4. In general, would you consider that three-year program students who complete studies in your discipline are as well prepared in your discipline as four-year program students?

%	
13.2	☐ Yes, very definitely
30.9	☐ Yes, generally
27.6	☐ No, not necessarily
28.3	☐ No, definitely not

$\bar{x}$=2.71

5. The following two questions ask your perceptions of certain aspects of the student's level of preparation at two different times during the clinical portion of their medical education: A) upon entry to their first clinical service rotation following the completion of their preclinical training and B) after approximately six months of clinical education. In each instance you are requested to compare three-year program students with those that formerly entered your service when your institution conducted a four-year program. Please indicate your opinions by checking the appropriate response for each statement below.

Compared to previous four-year program students, the three-year program students are:

		Much Better Prepared	Better Prepared	About The Same	Less Well Prepared	Much Less Well Prepared
	A. Perceptions when student enters first clinical rotation					
		%	%	%	%	%
$\bar{x}$=3.34	Ability to take patient history	4.9	7.0	46.9	31.5	9.8
$\bar{x}$=3.47	Ability to conduct physical examinations	3.5	5.6	42.0	38.5	10.5
$\bar{x}$=3.54	Ability to formulate a differential diagnosis	2.1	4.9	39.2	44.8	9.1
$\bar{x}$=3.66	Ability to formulate therapeutic plan	1.4	1.4	39.9	44.1	13.3
$\bar{x}$=3.59	Overall knowledge of basic science	1.4	4.9	41.3	38.5	14.0
$\bar{x}$=3.46	Ability of student to adapt basic science information to clinical setting	0.7	9.8	39.9	42.0	7.7
$\bar{x}$=3.49	Ability of student to synthesize (integrate) knowledge in clinical setting	1.4	7.0	42.0	40.6	9.1
	Other (please specify) ______					

5. cont'd.

Compared to previous four-year program students, the three-year program students are:

B. Perceptions of students after approximately six months of clinical service education

		Much Better Prepared	Better Prepared	About The Same	Less Well Prepared	Much Less Well Prepared
		%	%	%	%	%
$\bar{x}$=3.12	Ability to take patient history	2.1	6.9	69.0	20.7	1.4
$\bar{x}$=3.17	Ability to conduct physical examinations	1.4	7.6	66.2	22.8	2.1
$\bar{x}$=3.28	Ability to formulate a differential diagnosis	1.4	7.6	57.2	29.7	4.1
$\bar{x}$=3.34	Ability to formulate therapeutic plan	0.7	4.8	60.0	28.3	6.2
$\bar{x}$=3.40	Overall knowledge of basic science	2.1	7.6	46.2	36.6	7.6
$\bar{x}$=3.30	Ability of student to adapt basic science information to clinical setting	1.4	9.0	53.8	30.3	5.5
$\bar{x}$=3.26	Ability of student to synthesize (integrate) knowledge in clinical setting	2.1	7.6	56.6	29.7	4.1
	Other (please specify)					
	____________					
	____________	____	____	____	____	____

6. As a clinical faculty member, do you feel that the pool of applicants graduating from three-year programs are as competitive for post-graduate training positions as those students graduating from four-year programs?

%

20.8 ☐ Yes, definitely

21.4 ☐ Yes, to some extent

13.0 ☐ Uncertain

33.1 ☐ No, not entirely

11.7 ☐ No, definitely not

If answer is "no", please indicate why.

%

50.0 ☐ Four-year program students tend to be more mature.

65.7 ☐ Four-year program students possess more clinical experience.

78.6 ☐ Four-year program students tend to possess more depth in their knowledge.

28.6 ☐ Four-year program students demonstrate better performance in post-graduate education.

☐ Other (please comment) ______________________________

____

7. Regarding the availability of internships/residencies for graduates of three-year medical programs, do you feel there is a loss in necessary undergraduate clinical experience by three-year graduates compared to four-year graduates?

%

17.0 ☐ Yes, very much so

45.8 ☐ Yes, to some extent

13.7 ☐ Uncertain

20.9 ☐ No, not usually

2.6 ☐ No, definitely not

7. Cont'd.

If "yes", is this lessening of experience critical in the students' competitiveness for "quality" positions following graduation from medical school?

%
17.3 ☐ Yes, very much so
41.3 ☐ Yes, to some extent
27.9 ☐ Uncertain
12.5 ☐ No, not usually
1.0 ☐ No, definitely not

$\bar{x}=2.38$

8. In your opinion, if there is a loss, can this loss be regained relatively easily by the student during the first portion of his internship and/or residency?

%
27.8 ☐ Yes, very definitely
42.9 ☐ Yes, to some extent
15.8 ☐ Uncertain
11.3 ☐ No, not necessarily
2.3 ☐ No, definitely not

9. Do you feel that intern and resident selection committees have less information on which to judge the quality of the applicant from a three-year program compared to an applicant from a four-year program?

%
27.3 ☐ Yes, very definitely
37.0 ☐ Yes, to some extent
9.1 ☐ Uncertain
24.0 ☐ No, not necessarily
2.6 ☐ No, definitely not

$\bar{x}=2.38$

10. As a faculty member, compared to four-year students, do you feel you have sufficient information about the three-year program student's performance when requested to write recommendations for post-graduate training?

%

32.5 ☐ Yes, very definitely

29.9 ☐ Yes, to some extent

11.7 ☐ Uncertain $\bar{x}$=2.36

20.8 ☐ No, not necessarily

5.2 ☐ No, definitely not

11. Did the conversion to the three-year program bring about any changes in your personal instructional methodology?

38.0% ☐ Yes 62.0% ☐ No

If "yes", how would you evaluate the impact of the change upon your teaching effectiveness?

My teaching effectiveness was:

%

4.2 ☐ Greatly increased

43.7 ☐ Somewhat increased

19.7 ☐ Unchanged $\bar{x}$=2.82

31.0 ☐ Somewhat decreased

1.4 ☐ Greatly decreased

12. When you participated in your institution's four-year program, did you write, and distribute to students, instructional objectives for your subject area of responsibility? (Please do not consider course or lecture outlines as instructional objectives.)

27.1% ☐ Yes 72.9% ☐ No

13. Do you presently write, and distribute to students, instructional objectives for your subject area of responsibility? (Again, please do not consider course or lecture outlines as instructional objectives.)

57.0% ☐ Yes 43.0% ☐ No

13. Cont'd.

If "yes", did the process of converting to a three-year program initiate your utilization of instructional objectives?

38.6% ☐ Yes 61.4% ☐ No

14. In preparation for the presentation of your subject areas (lectures) to the three-year program students, did you increase the utilization of associated learning resources (i.e., read-slide programs, movies, video tapes, etc.) compared to what it was for the four-year program students?

32.9% ☐ Yes 67.1% ☐ No

If "yes", which of the following best describes your reasons for the increased utilization of associated learning materials?

☐ Provided opportunity for presentation of material and/or cases not available during clinical rotation.

☐ Provided opportunity to clarify concepts required during clinical rotation.

☐ Revisions in presentations required to accommodate three-year conversion necessitated the use of associated learning materials.

☐ Provided review of concepts that were covered in preclinical education.

☐ Other (please specify) ______________________________

Did you prepare and develop your own self-instructional programs?

33.3% ☐ Yes 45.7% ☐ No 20.9% ☐ Not Used

15. Do you feel that the content within your discipline for which students are held responsible in the three-year program has significantly changed from that which was required in the four-year program?

%
11.9 ☐ Very much changed
33.8 ☐ Somewhat changed
20.5 ☐ Slightly changed
33.8 ☐ Not changed at all

$\bar{x}=2.76$

16. What impact has the participation in a three-year curriculum had upon your research productivity - the extent to which you are able to obtain and conduct funded research compared to what it was in four-year program operation?

%
8.7 ☐ Has greatly decreased my research productivity. $\bar{x}=2.63$
21.3 ☐ Has somewhat decreased my research productivity.
68.7 ☐ Has neither decreased nor increased my research productivity.
1.3 ☐ Has somewhat increased my research productivity.
– ☐ Has greatly increased my research productivity.

17. Do you have within your teaching obligations in the three-year program, sufficient continuous research time?

32.9% ☐ Yes 67.1% ☐ No

18. When your institution operated a four-year program, did you then have sufficient continuous research time within your teaching obligations?

57.0% ☐ Yes 43.0% ☐ No

19. Did the conversion to a three-year program cause you to redistribute your periods of research activity?

37.2% ☐ Yes 62.8% ☐ No

If "yes", did the redistribution facilitate, inhibit, or have no effect on your research activity?

%
1.7 ☐ Facilitated
37.9 ☐ Had no effect $\bar{x}=2.59$
60.3 ☐ Inhibited

20. What is your specialty? ______________________________

21. Please indicate your rank below:

%

21.3 ☐ Professor

29.4 ☐ Associate Professor

27.2 ☐ Assistant Professor

3.8 ☐ Instructor

14.5 ☐ Resident/Intern

3.8 ☐ Other (please specify) ______________________________

22. Were you at this institution when the three-year program was being considered for adoption?

83.1% ☐ Yes   16.9% ☐ No

FACULTY IMPRESSIONS

Below are listed a number of statements regarding three-year undergraduate medical education programs and their impact upon undergraduate medical students. Please indicate your personal views regarding each statement below by circling the appropriate response. Even though a number of the statements are very general, please indicate your level of agreement or disagreement with each statement as it appears. In making your responses to the statements, please refer to the categories of agreement/disagreement defined below.

		STRONGLY AGREE	AGREE	MILDLY AGREE	MILDLY DISAGREE	DISAGREE	STRONGLY DISAGREE
$\bar{x} = 4.45$	1. Students appear to be more satisfied with three-year programs than with four-year programs.	1.2	7.4	11.9	22.7	38.7	18.2
$\bar{x} = 3.12$	2. Students participating in and graduating from three-year programs appear to be somewhat less mature in their outlook and learning behavior than four-year program students.	13.5	26.5	21.9	16.9	15.3	5.9
$\bar{x} = 4.60$	3. Three-year programs are generally more relevant to the students' needs than are longer programs.	0.9	7.9	10.0	16.4	40.7	24.1
$\bar{x} = 2.95$	4. Students in our three-year program are held responsible for the same amount of content as students in four-year programs.	10.5	41.1	14.7	13.8	15.9	3.9
$\bar{x} = 4.05$	5. Most students would prefer three-year programs if there were no perceived differences in the type of internships available upon graduation.	3.5	13.6	14.9	22.1	33.7	12.2
$\bar{x} = 4.46$	6. Students appear to be more motivated in a three-year program than in the longer programs.	2.7	6.7	10.5	19.0	43.6	17.4
$\bar{x} = 3.37$	7. Only students of extremely high academic ability can benefit from three-year programs.	12.0	22.4	19.4	15.3	24.7	6.2
$\bar{x} = 2.55$	8. Students in three-year programs have less opportunity to develop "role identity" than those in four-year programs.	18.4	39.9	22.7	7.6	10.1	1.4

		STRONGLY AGREE	AGREE	MILDLY AGREE	MILDLY DISAGREE	DISAGREE	STRONGLY DISAGREE
$\bar{x} = 3.10$	9. There is a decrease in student-faculty interaction as a result of three-year programs.	12.7	31.2	19.4	11.7	19.6	5.4
$\bar{x} = 3.00$	10. Students generally appear to be less prepared for the clinical phase of their education in three-year programs than those from four-year programs.	16.1	27.8	21.3	14.0	16.3	4.5
$\bar{x} = 3.42$	11. Students in three-year programs generally appear to have more difficulty adapting to the clinical environment than four-year students.	8.1	20.6	23.9	21.4	20.9	5.1
$\bar{x} = 3.52$	12. Students in three-year programs generally have less exposure to clinical faculty prior to clerkship rotations than students in four-year programs.	7.6	21.5	20.6	18.1	26.0	6.3
$\bar{x} = 2.50$	13. There is not sufficient time for students to plan their career goals in three-year programs.	26.4	29.2	24.0	10.0	8.7	1.6
$\bar{x} = 2.05$	14. The elimination or reduction of vacation time puts the three-year program student under a "strain".	40.6	31.9	16.0	5.5	4.9	0.9
	15. There appears to be an informal or unconscious bias against students of three-year programs on the part of:						
$\bar{x} = 3.80$	a. basic science faculty	5.3	14.6	20.5	20.7	32.0	6.8
$\bar{x} = 3.57$	b. clinical faculty	4.4	17.2	28.8	20.5	24.4	4.7
$\bar{x} = 3.76$	c. house staff	3.8	13.0	23.7	26.4	28.7	4.3
$\bar{x} = 3.25$	d. those selecting candidates for post-graduate training.	6.6	22.7	32.2	18.3	18.1	2.0
$\bar{x} = 2.59$	16. Students from a three-year program are just as likely to become competent physicians as students from four-year programs.	20.1	35.7	20.4	14.0	8.1	1.7
$\bar{x} = 2.12$	17. In general, the adoption of a three-year program does not substantially increase discipline content.	21.1	57.3	13.9	4.7	2.0	1.1

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		STRONGLY AGREE	AGREE	MILDLY AGREE	MILDLY DISAGREE	DISAGREE	STRONGLY DISAGREE
$\bar{x} = 4.83$	18. The time permitted for student learning and synthesis of information is not altered by the adoption of a three-year program.	0.8	5.9	5.7	17.0	38.9	31.7
$\bar{x} = 2.94$	19. A three-year program results in a noticeable decrease in students pursuing combined degree programs (M.D./Ph.D. or Masters).	16.1	28.6	19.8	18.8	14.2	2.4
$\bar{x} = 2.41$	20. In three-year programs, students express more concern that they have virtually no time to do anything else but study than do students in four-year programs.	22.9	40.1	20.0	8.4	8.1	0.6
$\bar{x} = 2.28$	21. Students appear to be under more "strain" while progressing through three-year programs.	28.7	36.5	29.9	7.1	5.7	1.1
$\bar{x} = 2.18$	22. In three-year programs, students have hardly any time available for in-depth study within various disciplines.	32.0	37.9	16.0	9.3	4.2	0.6
$\bar{x} = 3.30$	23. Students of three-year programs appear to be having some problem with retention of information over extended periods of time compared to students of four-year programs.	10.4	20.4	23.9	23.0	19.2	3.1
$\bar{x} = 2.86$	24. Faculty generally feel that students from three-year programs are less prepared for the clinical phase of their education than those in four-year programs.	12.3	31.8	28.1	15.1	10.9	1.8
$\bar{x} = 4.42$	25. Most students selected this medical school because it offered a three-year program.	2.8	6.4	18.4	24.3	34.9	13.2
$\bar{x} = 3.52$	26. In general, adoption of a three-year program does not substantially decrease total hours of discipline content.	4.1	25.8	22.8	16.4	23.4	7.5
$\bar{x} = 2.34$	27. Students in three-year programs are under a "strain" due to the reduction of free time.	24.2	37.7	25.1	6.8	5.3	0.8
$\bar{x} = 3.86$	28. The operation of a three-year program results in a more effective utilization of available audio vusual materials (e.g., slides, tapes, video, equipment).	1.5	12.9	26.1	23.5	29.5	6.5

		STRONGLY AGREE	AGREE	MILDLY AGREE	MILDLY DISAGREE	DISAGREE	STRONGLY DISAGREE
$\bar{x} = 2.70$	29. Generally, the emergence of interdisciplinary programs (i.e., organ system, body system, approaches) is more responsible for curricular content modification than adapting to a three-year program.	15.2	38.0	22.7	11.6	10.6	2.0
$\bar{x} = 3.25$	30. As a consequence of implementing a three-year program, there is a general decrease in the importance of the basic medical sciences in undergraduate medical education.	13.2	22.3	22.0	18.1	17.5	7.0
$\bar{x} = 2.19$	31. Students in three-year programs are under a "strain" which is partially caused by what students feel as "too much information in too short a period of time".	29.4	37.3	23.8	4.1	5.0	0.3
$\bar{x} = 4.92$	32. There is more curricular flexibility (i.e.,ease of accommodating students with academic problems, offering of special programs and courses) in a three-year program than in a four-year program.	1.8	4.9	4.6	14.2	37.3	37.2
$\bar{x} = 2.58$	33. Conversion from a four-year to a three-year program would require a departmental re-examination of discipline input to the undergraduate medical education program.	14.9	44.3	22.1	6.8	10.4	1.5

34. In your own personal opinion, would you prefer teaching in a three-year program or a four-year program?

56.8% ☐ I would definitely prefer teaching in a four-year program.
18.8% ☐ I would somewhat prefer teaching in a four-year program.
19.4% ☐ I have no greater preference for one over the other. $\bar{x} = 1.75$
2.6% ☐ I would somewhat prefer teaching in a three-year program.
2.4% ☐ I would definitely prefer teaching in a three-year program.

35. Did you receive your medical education in the Army ASTP or the Navy V-12 program during 1941–1945?

8.7% ☐ Yes ☐ No 91.3%

If "yes", did you participate in a three-year medical school program?

47.9% ☐ Yes ☐ No 52.1%

36. For Housestaff (Interns/Residents) only:

Did you receive your undergraduate medical education in a three-year medical school program?

49.1% ☐ Yes ☐ No 50.9%

APPENDIX E

Student Questionnaire Summary

STUDENT SURVEY
(Three-year Students)

The following results are based upon 179 Student Survey questionnaires returned from a sample of 303 students in regular three-year programs or students opting for three years in an optional program.

The sample was drawn from twelve schools operating three-year programs and an additional two schools which had an option for completing in three calendar years. The questionnaires were sent to the OSR representative at each of the fourteen institutions, who then distributed the questionnaires to students as per instructions by the project staff. The distribution of the returned questionnaires regarding respondent's year in his/her program is as follows:

	N	%
First year	62	34.6
Second year	55	30.7
Third year	53	29.6
Fourth year*	9	5.0
	179	99.9

*These respondents were students who chose to go a fourth year in an institution which was converting to a four-year program.

1. Factors influential in students' evaluation of schools to which they applied.

Factor	Percent of Respondents Who Said Factor Was Influential		
	N	% of Total	(Ranked of 7)
a. Perception of school's reputation	112	62.9	1
b. Length of undergraduate curriculum	52	29.2	4
c. Immediate family recommendation	23	12.9	6
d. Family physician recommendation	7	3.9	7
e. School state supported in state of residence	110	61.8	2
f. Particular educational program for which student had interest	43	24.2	5
g. Tuition and associated education costs	76	42.7	3

2. Currently attending school of first choice?

	N	%
Yes	108	60.3
No	70	39.1
No response	1	0.6
	179	100.0

3. Did you select present school because it had three-year program?

	N	%
Yes	50	27.9
No	125	69.8
No response	4	2.2
	179	99.9

3a. If "yes", at the time of entry, which things did you see as advantages of three-year program?

(Number answering "yes" to item 3 = 50)	N	% of those saying "yes"	% of total	(Ranked of 7)
Permit me to gain a year and graduate earlier than in a four-year program	45	90.0	25.1	1
I knew my career choice and wanted to begin training as soon as possible	20	40.0	11.2	4
Felt that three-year program would be more clinically relevant than a four-year program	9	18.0	5.0	6
Three-year program would have shorter time in basic sciences, thus starting clinical phase earlier	23	46.0	12.8	3
Learning requirements are different from those in four-year program	37	74.0	20.7	2
Would cost less in tuition than a four-year program	16	32.0	8.9	5
Felt three-year program would offer more flexibility in rate and mode of study than a four-year program	5	10.0	2.8	7

4. Now that you have experienced the three-year program, do you now feel that those things you thought were advantages are still advantages of a three-year program?

	N	%	
Yes	95	53.1	(64.6)
No	52	29.0	(35.4)
No response	32	17.9	
	179	100.0	(100.0)

6. cont'd.

		Time allocated for the activity is:					
	Activity	Much More Than Necessary	A Little More Than Necessary	About Right	A Little Less Than Necessary	Much Less Than Necessary	Not Applicable
(4 miss)	Faculty time available for individual assistance in subject matter	1.7	4.6	55.4	27.4	9.1	1.7
(2 miss)	Early exposure to patients in your curriculum	1.1	3.4	59.9	26.6	9.0	---
(3 miss)	Clinical relevance of basic science information	---	2.8	46.0	37.5	12.5	1.1
(3 miss)	Available personal study time	---	5.1	29.5	34.1	31.3	---
(2 miss)	Available personal free time	---	2.8	18.6	35.6	42.4	0.6
(2 miss)	Vacations	0.6	0.6	22.0	28.2	46.9	1.7
	CLINICAL SCIENCES						
(15 miss)	Required clerkship rotations	---	2.4	45.7	13.4	6.7	31.7
(15 miss)	Curricular time for clinical electives	---	---	20.7	25.6	21.3	32.3
(19 miss)	Available didactic sessions during clerkships	---	2.5	31.9	20.0	10.0	35.6

7. Please indicate below your date of entry into medical school (month, year).

_________ (month) _________ (year)

6. For each activity below, please indicate your personal opinion regarding the amount of time allocated for that activity in the three-year curriculum. For each activity, indicate whether the time allocated is, in your opinion, more than necessary or less than necessary by marking the appropriate response to the right of the activity. For those activities in which you have not yet been involved, simply indicate by marking the "not applicable" response.

		Time allocated for the activity is:					
	Activity	Much More Than Necessary	A Little More Than Necessary	About Right	A Little Less Than Necessary	Much Less Than Necessary	Not Applicable
	BASIC SCIENCES						
	Scheduled lectures in:						
	Biochemistry	4.5	20.7	60.3	10.6	1.7	2.2
	Anatomy	3.9	7.3	47.5	30.2	10.6	0.6
	Physiology	---	6.1	55.9	33.0	5.0	---
	Pathology	0.6	6.7	52.0	22.3	15.6	2.8
(1 miss)	Pharmacology	0.6	3.4	37.6	32.0	16.9	9.6
(1 miss)	Microbiology	3.9	11.2	46.6	27.0	7.9	3.4
	Scheduled laboratories in:						
(2 miss)	Biochemistry	3.4	7.9	20.9	5.6	7.3	54.8
	Anatomy	3.4	8.4	53.1	22.3	10.6	2.2
(1 miss)	Physiology	2.2	16.3	39.9	12.4	7.3	21.9
	Pathology	1.1	11.2	46.9	16.8	11.2	12.8
(2 miss)	Pharmacology	---	6.2	18.6	10.7	9.6	54.8
(3 miss)	Microbiology	2.3	11.9	48.9	8.0	9.7	19.3
(3 miss)	Small group discussions in all Basic Science disciplines	0.6	5.1	39.2	29.5	18.8	6.8
(1 miss)	Overlap of subject matter by Basic Science disciplines	2.8	9.6	61.2	16.9	8.4	1.1

8. Basic Science disciplines which you have already completed.

	N	%
Anatomy	120	67.0
Biochemistry	123	68.7
Microbiology	99	55.3
Pathology	88	49.2
Pharmacology	90	50.3
Physiology	114	63.7
Completed all Basic Science	119	66.5

9. Indicate the type of medical school program in which you are now enrolled.

	N	%
Regular three-year program	104	58.1
Three-year program with a four-year option	56	31.3
Four-year program with a three-year option	11	6.1
Regular four-year program	--	--
No response	8	4.5
	179	100.0

Student Attitudes

1. Students in a three-year program are as well prepared for clinical education as four-year program students.

	N	%	
Strongly Agree	27	15.1	64.2
Agree	62	34.6	
Mildly Agree	26	14.5	
Mildly Disagree	39	21.8	35.8
Disagree	20	11.2	
Strongly Disagree	5	2.8	
	179	100.0	

$\overline{X} = 2.88$
SD = 1.36

2. Students in a three-year program have just as much free time as students in a four-year program.

	N	%	
Strongly Agree	3	1.7	10.6
Agree	6	3.4	
Mildly Agree	10	5.6	
Mildly Disagree	20	11.2	89.4
Disagree	64	35.8	
Strongly Disagree	76	42.5	
	179	100.2	

$\overline{X} = 5.03$
SD = 1.16

3a. Students in a three-year program have sufficient time for independent, in-depth study of selected content areas.

	N	%	
Strongly Agree	1	0.6	11.2
Agree	9	5.0	
Mildly Agree	10	5.6	
Mildly Disagree	37	20.7	88.8
Disagree	59	33.0	
Strongly Disagree	63	35.2	
	179	100.1	

$\overline{X} = 4.86$
SD = 1.15

3b. Students have sufficient time for synthesis and integration of material.

	N	%	
Strongly Agree	3	1.7	41.3
Agree	38	21.2	
Mildly Agree	33	18.4	
Mildly Disagree	40	22.3	58.7
Disagree	35	19.6	
Strongly Disagree	30	16.8	
	179	100.0	

$\overline{X} = 3.87$
SD = 1.43

3c. Students do not have sufficient time to participate in or attend cultural activities.

	N	%	
Strongly Agree	24	13.4	
Agree	44	24.6	63.7
Mildly Agree	46	25.7	
Mildly Disagree	27	15.1	
Disagree	27	15.1	36.3
Strongly Disagree	11	6.1	
	179	100.0	

$\overline{X} = 3.12$
SD = 1.44

3d. Students feel uncomfortable about level of knowledge because they cannot thoroughly learn material.

	N	%	
Strongly Agree	33	18.5	
Agree	48	27.0	74.7
Mildly Agree	52	29.2	
Mildly Disagree	20	11.2	
Disagree	20	11.2	25.3
Strongly Disagree	5	2.8	
	178	99.9	

$\overline{X} = 2.78$
SD = 1.34

3e. Students with personal problems have sufficient time to resolve them without severe academic setback.

	N	%	
Strongly Agree	3	1.7	
Agree	15	8.4	20.2
Mildly Agree	18	10.1	
Mildly Disagree	31	17.4	
Disagree	59	33.1	79.8
Strongly Disagree	52	29.2	
	178	99.9	

$\overline{X}$ = 4.60
SD - 1.32

3f. The "stress" on three-year program students is generally greater than in four-year programs.

	N	%	
Strongly Agree	51	28.5	
Agree	50	27.9	80.4
Mildly Agree	43	24.0	
Mildly Disagree	17	9.5	
Disagree	15	8.4	19.6
Strongly Disagree	3	1.7	
	179	100.0	

$\overline{X}$ = 2.46
SD = 1.31

4. The three-year curriculum is more relevant to society medical needs than a four-year program.

	N	%	
Strongly Agree	3	1.7	
Agree	14	8.0	29.1
Mildly Agree	34	19.4	
Mildly Disagree	35	20.0	
Disagree	52	29.7	70.9
Strongly Disagree	37	21.1	
	175	99.9	

$\overline{X}$ = 4.31
SD = 1.31

5. The "compression" of content presentation causes otherwise qualified students to have academic problems more than in a four-year program.

	N	%	
Strongly Agree	12	6.8	
Agree	38	21.5	49.2
Mildly Agree	37	20.9	
Mildly Disagree	37	20.9	
Disagree	38	21.5	50.8
Strongly Disagree	15	8.5	
	177	100.1	

$\overline{X}$ = 3.54
SD = 1.43

6. Students in a three-year program appear to be more highly motivated as result of shorter time to completion of requirements for M.D.

	N	%	
Strongly Agree	6	3.4	
Agree	12	6.8	25.4
Mildly Agree	27	15.3	
Mildly Disagree	57	32.2	
Disagree	56	31.6	74.6
Strongly Disagree	19	10.7	
	177	100.0	

$\overline{X} = 4.14$
SD = 1.21

7. There is a noticeable decline in individual faculty/student tutorial sessions as result of three-year program.

	N	%	
Strongly Agree	8	4.7	
Agree	25	14.5	45.9
Mildly Agree	46	26.7	
Mildly Disagree	41	23.8	
Disagree	45	26.2	54.1
Strongly Disagree	7	4.1	
	172	100.0	

$\overline{X} = 3.65$
SD = 1.26

8. The basic science faculty have transmitted a favorable opinion of the three-year program.

	N	%	
Strongly Agree	2	1.1	
Agree	23	12.8	24.0
Mildly Agree	18	10.1	
Mildly Disagree	32	17.9	
Disagree	58	32.4	76.0
Strongly Disagree	46	25.7	
	179	100.0	

$\overline{X}$ = 4.45
SD = 1.37

9. The clinical faculty and housestaff have transmitted a favorable opinion of the three-year program.

	N	%	
Strongly Agree	3	1.8	
Agree	17	10.2	25.9
Mildly Agree	23	13.9	
Mildly Disagree	47	28.3	
Disagree	47	28.3	74.1
Strongly Disagree	29	17.5	
	166	100.0	

$\overline{X}$ = 4.23
SD = 1.28

10. There appears to be more interdepartmental cooperation in a three-year program.

	N	%	
Strongly Agree	4	2.4	
Agree	27	16.2	44.3
Mildly Agree	43	25.7	
Mildly Disagree	33	19.8	
Disagree	37	22.2	55.7
Strongly Disagree	23	13.8	
	167	100.1	

$\bar{X} = 3.84$
SD = 1.37

11. There appears to be more interdepartmental teaching in a three-year program.

	N	%	
Strongly Agree	9	5.4	
Agree	32	19.3	54.8
Mildly Agree	50	30.1	
Mildly Disagree	29	17.5	
Disagree	32	19.3	45.2
Strongly Disagree	14	8.4	
	166	100.0	

$\bar{X} = 3.51$
SD = 1.37

12. Students in a three-year program have as much opportunity to develop "role identity" as students in a four-year program.

	N	%	
Strongly Agree	13	7.3	
Agree	39	22.0	46.9
Mildly Agree	31	17.5	
Mildly Disagree	41	23.2	
Disagree	26	14.7	53.1
Strongly Disagree	27	15.3	
	177	100.0	

$\overline{X} = 3.62$
SD = 1.53

13. There is a decrease in student/faculty interaction as result of three-year programs.

	N	%	
Strongly Agree	14	8.0	
Agree	36	20.5	48.9
Mildly Agree	36	20.5	
Mildly Disagree	26	14.8	
Disagree	48	27.3	51.1
Strongly Disagree	16	9.1	
	176	100.2	

$\overline{X} = 3.60$
SD = 1.49

14. Students in a three-year program have just as much exposure to clinical faculty during the preclinical training as do four-year program students.

	N	%	
Strongly Agree	19	11.2	
Agree	54	32.0	64.5
Mildly Agree	36	21.3	
Mildly Disagree	27	16.0	
Disagree	26	15.4	35.5
Strongly Disagree	7	4.1	
	169	100.0	

$\overline{X}$ = 3.05
SD = 1.39

15. There is not sufficient time for students to plan career goals in a three-year program.

	N	%	
Strongly Agree	45	25.3	
Agree	30	16.9	64.6
Mildly Agree	40	22.5	
Mildly Disagree	20	11.2	
Disagree	31	17.4	35.4
Strongly Disagree	12	6.7	
	178	100.0	

$\overline{X}$ = 2.99
SD = 1.62

16a. There seems to be an informal or unconscious bias against three-year programs on the part of the basic science faculty.

	N	%	
Strongly Agree	12	7.0	39.8
Agree	22	12.9	
Mildly Agree	34	19.9	
Mildly Disagree	49	28.7	60.2
Disagree	48	28.1	
Strongly Disagree	6	3.5	
	171	100.1	

$\overline{X}$ = 3.68
SD = 1.29

16b. There seems to be an informal or unconscious bias against three-year programs on the part of house staff.

	N	%	
Strongly Agree	6	3.7	34.6
Agree	20	12.3	
Mildly Agree	30	18.5	
Mildly Disagree	53	32.7	65.4
Disagree	47	29.0	
Strongly Disagree	6	3.7	
	162	99.9	

$\overline{X}$ = 3.82
SD = 1.19

16c. There seems to be an informal or unconscious bias against three-year programs on the part of interships following graduation.

	N	%	
Strongly Agree	13	8.6	53.0
Agree	25	16.6	
Mildly Agree	42	27.8	
Mildly Disagree	39	25.8	47.0
Disagree	24	15.9	
Strongly Disagree	8	5.3	
	151	100.0	

$\overline{X} = 3.40$
SD = 1.32

16d. There seems to be an informal or unconscious bias against three-year programs on the part of clinical faculty.

	N	%	
Strongly Agree	7	4.4	46.9
Agree	26	16.3	
Mildly Agree	42	26.3	
Mildly Disagree	43	26.9	53.1
Disagree	37	23.1	
Strongly Disagree	5	3.1	
	166	100.1	

$\overline{X} = 3.58$
SD = 1.22

16e. There seems to be an informal or unconscious bias against the three-year program in careers available to students.

	N	%	
Strongly Agree	6	3.7	42.0
Agree	21	13.0	
Mildly Agree	41	25.3	
Mildly Disagree	39	24.1	58.0
Disagree	43	26.5	
Strongly Disagree	12	7.4	
	162	100.0	

$\overline{X}$ = 3.79
SD = 1.28

17. In three-year programs, students express concern that they virtually have no time to do anything else but study.

	N	%	
Strongly Agree	42	23.5	77.7
Agree	53	29.6	
Mildly Agree	44	24.6	
Mildly Disagree	18	10.1	22.3
Disagree	18	10.1	
Strongly Disagree	4	2.2	
	179	100.1	

$\overline{X}$ = 2.60
SD = 1.34

18. If I had it to do over again, I would again choose the three-year program.

	N	%	
Strongly Agree	40	22.7	
Agree	43	24.4	54.0
Mildly Agree	12	6.8	
Mildly Disagree	17	9.7	
Disagree	31	17.6	46.0
Strongly Disagree	33	18.8	
	176	100.0	

$\overline{X} = 3.31$
SD = 1.89

APPENDIX F

Clinical Program Directors Questionnaire Summary

PROGRAM DIRECTORS

The following results are based upon 267 questionnaires returned from a sample of 375 clinical program directors who received the questionnaire in the mail. The sample of 375 program directors was drawn from a national population of non-university based teaching hospitals and/or teaching hospitals not affiliated with a three-year program institution. The sample included directors of the six major services including family practice. The representation of the six specialties in the 267 returned questionnaires is as follows:

	N	%
Family Practice	26	9.7
Internal Medicine	58	21.7
Obstetrics/Gynecology	42	15.7
Pediatrics	52	19.5
Psychiatry	38	14.2
Surgery	45	16.9
Unspecified	6	2.2
	267	99.9

1. Is pool of three-year program applicants as competitive for your positions as four-year program applicants?

	N	%	
Yes, definitely	34	12.7	31.5
Yes, to some extent	50	18.7	
Uncertain	47	17.6	
No, not entirely	86	32.2	49.4
No, definitely not	46	17.2	
No response	4	1.5	
	267	99.9	

2. Generally, across country, is pool of three-year program applicants as competitive for positions as four-year program applicants?

	N	%	
Yes, definitely	19	7.1	21.0
Yes, to some extent	37	13.9	
Uncertain	59	22.1	
No, not entirely	103	38.6	55.4
No, definitely not	45	16.9	
No response	4	1.5	
	267	100.1	

2a. If "no", why not?

(Number from question #2 saying "no" = 148)	N	% of those saying "no"	% total sample
Four-year students are more mature	120	81.1	44.9
Four-year students have more clinical experience	120	81.1	44.9
Four-year students have more depth of knowledge	120	81.1	44.9
Four-year students have shown better post-graduate performance	51	34.5	19.1
Other	27	18.2	10.1

3. Is there a "loss" in necessary undergraduate clinical experience for three-year program graduates?

	N	%	
Yes, very much so	74	27.7	80.9
Yes, to some extent	142	53.2	
Uncertain	24	9.0	
No, not usually	19	7.1	7.9
No, definitely not	2	0.7	
No response	6	2.2	
	267	99.9	

3a. If there is a loss, is the loss critical in student competitiveness for "quality" positions after graduation?

	N	%	
Yes, very much so	48	21.5	70.0
Yes, to some extent	108	48.4	
Uncertain	32	14.3	
No, not usually	31	13.9	15.7
No, definitely not	4	1.8	
	223	99.9	

[No response = 44 (16.5% of total)]

4. Do you think this "loss" can easily be regained in early portion of residency?

	N	%	
Yes, very definitely	43	16.1	56.6
Yes, to some extent	108	40.4	
Uncertain	33	12.4	
No, not necessarily	54	20.2	22.1
No, definitely not	5	1.9	
No response	24	9.0	
	267	100.0	

5. Do you feel you have less information on which to judge the quality of three-year program applicants compared to four-year program applicants?

	N	%	
Yes, very definitely	77	28.8	63.3
Yes, to some extent	92	34.5	
Uncertain	15	5.6	
No, not necessarily	64	24.0	29.2
No, definitely not	14	5.2	
No response	5	1.9	
	267	100.0	

6. Did you receive your undergraduate medical education in an ASTP or V-12 program?

	N	%
Yes	47	17.6
No	220	82.4
	267	100.0

6a. If "yes", did you participate in a three-year program?

(Respondents answering "yes" above = 47)	N	% of "yes" above	% total sample
Yes	37	78.7	13.9
No	9	19.1	
No response	1	2.1	
	47	99.9	

7. Students from three-year programs appear to be less mature in outlook and learning behavior than four-year program students.

	N	%	
Strongly Agree	35	13.1	79.4
Agree	99	37.1	
Mildly Agree	78	29.2	
Mildly Disagree	17	6.4	16.5
Disagree	19	7.1	
Strongly Disagree	8	3.0	
No response	11	4.1	
	267	100.0	

8. Most students would prefer three-year programs if there were no differences in the types of internships available upon graduation.

	N	%	
Strongly Agree	11	4.1	35.6
Agree	42	15.7	
Mildly Agree	42	15.7	
Mildly Disagree	56	21.0	60.7
Disagree	88	33.0	
Strongly Disagree	18	6.7	
No Response	10	3.7	
	267	99.9	

9. Students in three-year programs have less opportunity to develop "role identity" than those in four-year programs.

	N	%	
Strongly Agree	50	18.7	
Agree	124	46.4	83.9
Mildly Agree	50	18.7	
Mildly Disagree	16	6.0	
Disagree	13	4.9	12.7
Strongly Disagree	5	1.9	
No response	9	3.4	
	267	100.0	

10. Students generally appear to be less prepared for the clinical phase of their education in three-year programs than those in four-year programs.

	N	%	
Strongly Agree	48	18.0	
Agree	105	39.3	80.5
Mildly Agree	62	23.2	
Mildly Disagree	21	7.9	
Disagree	17	6.4	15.0
Strongly Disagree	2	0.7	
No response	12	4.5	
	267	100.0	

11. There is not sufficient time for students to plan their career goals in a three-year program.

	N	%	
Strongly Agree	59	22.1	80.9
Agree	97	36.3	
Mildly Agree	60	22.5	
Mildly Disagree	18	6.7	16.9
Disagree	23	8.6	
Strongly Disagree	4	1.5	
No response	6	2.2	
	267	99.9	

12. There appears to be an informal or unconscious bias against students of three-year programs on the part of those selecting candidates for post-graduate training.

	N	%	
Strongly Agree	15	5.6	62.2
Agree	80	30.0	
Mildly Agree	71	26.6	
Mildly Disagree	43	16.1	33.7
Disagree	42	15.7	
Strongly Disagree	5	1.9	
No response	11	4.1	
	267	100.0	

13. Students from three-year programs are just as likely to become competent physicians as students from four-year programs.

	N	%	
Strongly Agree	31	11.6	
Agree	100	37.5	69.7
Mildly Agree	55	20.6	
Mildly Disagree	42	15.7	
Disagree	18	6.7	23.2
Strongly Disagree	2	0.7	
No response	19	7.1	
	267	99.9	

14. As a consequence of conversion to three-year programs, there is a general decrease in the importance of the basic medical sciences in undergraduate medical education.

	N	%	
Strongly Agree	28	10.5	
Agree	77	28.8	65.5
Mildly Agree	70	26.2	
Mildly Disagree	33	12.4	
Disagree	36	13.5	28.5
Strongly Disagree	7	2.6	
No response	16	6.0	
	267	100.0	

APPENDIX G

Four-year Deans Questionnaire Summary

N = 80/88 = (91%)

OMB #68-S74084
Expires 02/28/78

DEANS SURVEY

The following questions pertain to any considerations that your institution undertook regarding the conversion to a three-year undergraduate medical education program. Please respond candidly as your responses will be kept strictly confidential and will only be utilized in aggregate form with those of all other medical school deans.

1. Did you or your institution consider the conversion to or adoption of a three-year undergraduate medical education program during the period 1970-1975?

   28 Yes   52 No   0 Do Not Know

   (If "No", do not respond to the remaining questions.)

2. If "Yes", please indicate below, the major factors influential in considering conversion.

Positive Factors	
Federal legislation	9
Reduction in student time Reduction in student cost	9 5
Increase in physician output/ supply	4
State legislation	1

Negative Factors

Not enough time for student maturity
Too compressed
Restricted student flexibility
Required faculty increase in #s or time
Logistics problems
Restricted student electives (clin. exp.)
Too short time for students to learn
Career choice - too early
Residency selection out of phase
Manpower increase only 1 year
Lessening of standards
No faculty desire

3. Were federal financial incentives a major factor in considering the possibility of conversion?

   7 Yes, definitely   8 Yes, to some extent   12 No   1 blank

4. Did the consideration of conversion go beyond the Dean's Office level?

   25 Yes   1 No   1 blank   1 not normally

5. If "Yes", please specify the involved groups (i.e., curriculum committee, college executive committee).

Curriculum Cmte.	16	Office of Med. Ed. Res.	1
Exec. Faculty Council	12	Faculty Retreat	1
Full Faculty (At-large)	3	Governor's Advisory Cmte.	1
Special Cmte.	2	Trustees	1
Clinical Dept. Heads	1		